

University Chronicle

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STATEMENT FOR 1897-98.*

BY MARTIN KELLOGG.

What has the past year done for the University of California?

I.

It has brought various *gifts* from our friends. Among these are the following:

The very extensive Cowan collection of California books, pamphlets, and original manuscripts, both Spanish and English, presented by Mr. C. P. Huntington, at a cost of \$3,000.

Mr. J. J. Valentine, in the name of Wells, Fargo & Co., presented a full set of the *Bankers' Magazine* bought in London for us; and about fifty other books on finance and economics.

The Semitic Library has received, through Dr. Voorsanger, from unnamed donors, an addition of very rare and valuable books, including the Talmud in twelve volumes folio, and many incunabula.

Mr. James K. Moffitt has again given \$100 to the Library.

Mr. Louis Janin has given a valuable collection of books on mining and metallurgy.

* President's Commencement statement, 1898.

Other donors to the Library are Hon. John Swett, Mr. S. P. Avery of New York, Mr. G. H. Mastick, Mrs. G. H. Howison, and Mrs. Harriet D. Palmer. Regent Reinstein presented the original correspondence resulting in the Hearst gift for a permanent architectural plan for the University site.

Valuable specimens for different scientific collections were received from Messrs. H. C. Callahan, J. T. Arundel, and Newland Baldwin.

By a bequest of Mr. H. W. Gould, of San Diego, the University is to receive a large collection of minerals, Indian curios, etc., valued at \$7,000.

The very noteworthy Museum of Alaskan Products has been given by the Alaska Commercial Company.

Messrs. Fraser & Chalmers of Chicago, through Mr. W. W. Mein, gave a valuable ore sampler and ore crusher.

Regent Hallidie presented an engineer's transit.

Mr. James Moffitt gave a lease of three acres of land for viticultural experiments.

Mrs. Phebe A. Hearst has supplemented her other gifts by the sum of \$2,740 for lighting the University grounds, and for lighting and opening for evening use the Library building. She has also equipped the new room for young women. To the Mining department she has given an additional laboratory with its equipment. And she has helped to house us here to-day in this ample tent.

Public-spirited citizens of San Francisco, through the efforts of Mayor Phelan and others, have presented a site for the Wilmerding Industrial School.

This is surely a goodly list of benefactions for the year 1897-98. Not all the gifts are enumerated.

II.

The year has seen noteworthy *progress* in our University life.

The Affiliated College Buildings in San Francisco are nearing completion. At Berkeley we have four new

buildings, one of them replacing the burned Agricultural Hall, besides an addition to the Gymnasium. These are wooden structures, and are called temporary; but there will be use for them for many years to come. They were much needed, and were made possible by the generous appropriation by the last Legislature.

There has been progress in organization. The new College of Commerce has been established, and will begin its special work in August. A large number of its courses can be found in departments previously organized, and a distinguished scientist, Professor George Davidson, has already been added to its staff.

The graduate work of the University has been increased, as was necessary on account of the larger number of graduate students.

Instruction in the Semitic Department has been doubled, an accomplished scholar, Professor M. L. Margolis, having come to share Dr. Voorsanger's gratuitous labors. (This service of Dr. Voorsanger might well have been enumerated among the gifts; and so of Dr. Gutsch's lectures on Jurisprudence, and other help in various departments, from local experts and chance visitors.)

The Oriental chair, with Dr. John Fryer as incumbent, has an expanding work, and will be especially helpful to the new-College of Commerce.

University Extension has furnished many courses of lectures in San Francisco. One phase of it has been the Farmers' Institutes, which have been more numerous than before, and still more fully attended; with abundant testimony to their usefulness.

The University is in relation with more accredited high schools than ever before. The connection is of such manifest importance that it can by no means be terminated, though entailing much labor on several of our departments.

By the gauge of mere numbers the University has made progress, as its roll of students is larger than in any previous year: nearly 1,650 at Berkeley; over 2,350 in

all. More students receive their diplomas to-day: 232 at Berkeley; 105 from San Francisco, not counting the College of Pharmacy, whose students finish their course at another date.

What means this variety of Degrees given to-day, professional as well as academic? It means a closer coming together of the different departments of our throbbing University life. During the year a new Council of Associated Alumni has been formed, to concentrate and intensify the common interest of all who call this University their Alma Mater. In union is strength and joy.

The past year has brought a new development of a true University spirit. The Associated Students at Berkeley have themselves taken a manly stand against dangerous class collisions. We hail the beginnings of effective self-government in the student body. We congratulate that body, also, on the patient and successful training of so many for the modern *pentathlon*: that was the ancient word when Greek met Greek in all-round athletics. Still more do we praise those who have persistently trained themselves for arguing important questions in the open forum of public audiences. The prizes they won on February 12th and April 23rd in the Carnot and Intercollegiate Debates, are a token of growing intellectual strength.

In the student body itself is the surest test and the best hope of University progress.

III.

Our *standing* as a University has become stronger than ever before. Relative standing is hard to determine. It does not hinge on numbers alone, nor on income, nor on variety of departmental work, nor on the celebrity of a few foremost men. University standing is a sum total whose particular factors are more or less elusive. But the combination of these factors makes its clear-cut impression. In various ways we are aware of a fuller recognition of our standing in the outside world of science and literature.

We see the impression made upon the community of educators throughout the State. We note the momentum of earnest study in our class-rooms. We breathe consciously the air of higher ranges of thought in our diverse departments.

In token that this is not a mere feeling or wish on our part, we point to the many lines of progress which have been mentioned, which ought to insure a more solid footing, and a real advance in institutional power.

IV.

The good standing of our University depends largely on its controlling *ideas*. Without seeking to draw these out in full detail, I will say in the first place: the University tries to benefit the State whose name it bears. It is under bonds to the State and the Nation. To the Nation, which gave so generous a subsidy, it owes an unswerving loyalty. College men have before now sprung to the battle-front of their country's armies. Our trained battalions have turned out men now eagerly volunteering to rally round the flag in this war for humanity. When our Lieut. Cloman sails for the far Philippines, he will see with him some whose love of country has torn them away from their unfinished studies in our halls, men from his own University Cadets. To the State, which brought it into existence, and has been so kind a mother, the University is bound by the strongest filial ties. It must contribute to the State's welfare, in things material as well as in things intellectual and moral. Modern science has discovered many helps to the conduct and comfort of daily life, and so our scientific teaching can amply repay the State for its expenditure; and this it really does, many times over.

But that is not the highest view. The State wants good citizens, more than it wants good crops. The social and civic welfare of the community is the thing of highest value. There must be men and women of approved character, who will be intelligent and influential examples

of integrity and power for good, an unfailing stock to draw upon for the highest public service.

Such citizens are the product of an education both broad and high. The community as a whole needs a rich, well-rounded culture, embracing the best that has come down to us from the past, and the best that is developing in the present. The natural sciences, so largely the birth of this modern time, have an indispensable value; but the social sciences are equally needful. The great science of government has its roots in ancient times, and those times must be thoroughly studied from original sources. We need to know the languages and literatures of Greece and Rome, the countries which gave us the most complete examples,—the one, of a serene passion for beauty,—the other, of the power of civic organization. We must enter into their intellectual life; we must trace their undying influence through mediæval to modern civilization. This wide culture, I say, must be the possession of the community as a whole. The foremost nations of our era have recognized this need, and built up universities where the broadest range of intellectual development is open to all aspiring students.

Omnes non omnia possumus. No intellect can take in this whole round of learning. Therefore, individual choices must be made: students will take diverse lines of training and investigation. But there is some ground which ought to be common to all, such as the common-places of English literature and the plainest lessons of history: topics which will prevent the leaders of the community from drifting apart, into unsympathetic groups. After the common studies, special studies are to be selected, according to one's aptitudes and preference; but the election should not be premature, before the student is wise enough to know his wants. One entering this University has already a choice between colleges of widely differing courses. After the first years of study, his courses are entirely elective.

The trend of university life is such as to emphasize the subjects that have a direct outlook on the professions. Yet

many find the highest satisfaction in other studies. They are fascinated by scientific investigations; or charmed by ancient or modern literature; or incited to learn the theory and practice of good government; or absorbed in the marvelous history of the nations; or stimulated to study thinking man himself, as the one being who is to survive "the wrecks of matter and the crush of worlds."

University education will hark back to the ancients, while it welcomes the modern and the coming man. The ancients are not dead. Our Emerson says, for instance, "Out of Plato come all things that are still written and debated among men of thought." Inheritance gives us the centripetal forces of civilization: the centrifugal are springing from the ever-growing power of modern intellectual adventure. The balance of these forces insures the harmonious orbits of educated intellect, in the sweep of genuine human progress.

With such controlling Ideas, with such a Standing among the universities of the country, and making such Progress from year to year, the University of California asks the continued and increased interest of its friends. It is California's own creation, by and for her own people. Her people will surely not desert it. Though the times are hard, especially hard in this present year, Californians will not begin their stricter economies by taking away these educational privileges from their sons and daughters. In her direst straits, Prussia established the University of Berlin; and its influence did more than anything else to rehabilitate the nation, and lay the foundations of the greater German Empire. The people that is most intelligent will be the master people of its time.

But the State, as such, has its limitations, and cannot do everything that is needed. The universities most powerful in our land, forming the goodly company whose fellowship we claim, have all relied on private munificence. Harvard, Yale, Columbia, Princeton, Pennsylvania, Johns Hopkins, Cornell, Chicago,—what a noble list!—such

universities could not have become what they are without the endowments received from private sources. If the University of California is to do its best work, and meet all the demands made upon it, private munificence must help to build on the foundations laid by the State. At the very outset, this site was the contribution of individual donors to the previously existing College. Are Californians ready to respond to the present call?

A few noble gifts marked the earlier years of the University; but within the last two years a woman's hand has lifted high our educational banner; a woman's voice has spoken a challenge to all rich men to do something really great for California's University. How many will accept the challenge? When our crowded classes are properly housed, and our unrivaled site begins to receive its worthy architectural adornment, there will be still a great and pressing need. That need is endowments for many chairs of instruction. Tompkins and Mills have led the way; there ought to be a Klondike trail-full of followers.

Surely Californians have gathered wealth enough, a thousand times over, to respond to these claims. Surely enough of this wealth is in hands not ungenerous. It only needs that the hearts that beat above the hands shall be quickened by sympathy for such noble uses of fortune's gifts.

But the duty and the privilege of aiding the University do not come to the fortunate rich alone. All friends of the higher education can do something to promote it. The Alumni who acknowledge their indebtedness to their Alma Mater, their "cherishing mother," in turn can help to cherish her welfare and heighten her usefulness.

On you who this day receive her seal of approbation, is laid this new and happy burden. You are to-day singing your "Song of Degrees;" let its echo never cease to gladden the heart of your Alma Mater.

THE FUNCTION OF THE MODERN UNIVERSITY AND ITS RELATION TO MODERN LIFE.*

By EDMUND J. JAMES, PH.D.

What is the function of the modern University, and what its relation to practical life? There would doubtless be a great variety of answers to this question, according as it were asked of an American, an Englishman, a Frenchman, or a German, and there would be much difference in the opinion of different thinkers even within the same country.

But I take it that all these answers would have something in common, and it is that common element which must concern us here. All would agree, I think, that the University is primarily an educational institution, an institution to train the youth of the country, for the duties of practical life; all would agree that its work belongs to the later years of the systematic school training of the young men and women of the community; all would agree that its training presupposes a high degree of preliminary training and a considerable maturity of mind; all would agree that it is the highest institution, the crown, so to speak, of the educational system as a whole.

The University, then, to draft a provisional definition, is the highest educational institution of the community devoted to the advanced training of those young men and

* An address before the University of California at the Commencement, May 18, 1898, by Professor James of the University of Chicago.

women who have already passed through an extensive preliminary training, and who have attained to a high degree of mental and moral maturity.

It lies in the nature of this institution, as indeed of all other educational institutions, that the material utilized in the work of instruction and training shall be drawn from the field of that intellectual achievement of the race to which we give the name human science. It is only when knowledge becomes systematized and subject to classification which will reveal the underlying principles, that it becomes useful for the purposes of intellectual discipline. This is true of all instruction, lower as well as higher, but it is especially true of university instruction. The child acquires in its early years an enormous number of facts, lying oftentimes isolated in its consciousness with little or no attempt on its part to co-ordinate or explain them. But as the years go on, and these facts multiply and accumulate, they must be brought under some kind of regulation, some kind of classification, some kind of principle, or the youth is overwhelmed with this multiplicity of knowledge, and stands helpless in the presence of the world of thought and nature about him, reduced to intellectual impotence by the impossibility of digesting the material forced upon his attention. In the absence of this scientific ordering he remains intellectually a child his whole life; and our society alas! is full of such examples. The University should help co-ordinate, help reduce to the realm of law and principle this mass of knowledge which the growing youth acquires. In other words, the University must use systematized knowledge, science, as the instrument of its discipline. The University thus becomes necessarily, by the law of its own being, the home and center of science, using that term in its largest sense. It is therefore not only an educational institution, but a scientific one as well.

But here again two things are possible, two ways are open to the choice of our universities, and according as one or the other of these ways is taken will the University itself

become a vastly different institution. The University may on the one hand content itself with being a mere purveyor of the science of the past, it may limit itself to the process of cramming its pupils with the content of text-books, to the work of introducing them to the past achievements of the race in thought as something final. This is the way, if I understand the accounts we have of it, which is followed in the great universities and schools of China. In that country education is limited to a mastery of the thoughts of the ancient writers; the pupils memorize these, they dwell upon them, they revel in them, with no thought of criticising or improving upon them. The Golden Age of learning and thought is in the past, and to the past all attention is directed.

This was to a large extent also the way of the mediæval university. Men studied Aristotle and Plato, as if these great thinkers had spoken the last word upon the subjects of which they wrote. The Professors thought they had demonstrated a thing to be true if they had shown it to be Aristotle's idea, and to be false if it could be proved to be inconsistent with his system. This was also too often true of the English and American College during the last century and down far into the present one. The student memorized the words of Caesar, of Cicero, of Virgil, of Sophocles, of Demosthenes; he wrote Latin and Greek verses; he memorized the stories of Herodotus, of Livy, of Thucydides, of Josephus, and accepted all alike as history. He had little or no opportunity to become acquainted with the great literary and historical works of modern times, to say nothing of modern natural science. All this was a necessary result of the conception of university education then prevalent, which too often consisted in the uncritical acquisition by rote of the results of human science up to that time achieved.

There is, however, a second road open to the University, a different method of utilizing the various branches of human science in the training of the youth. This consists in training the student himself to become an investigator, in

arousing in him an ambition not merely to acquire the previous results of science, but to add something on his part to the sum total of human knowledge, to examine closely the present formulations, to uncover their weak points, to supplement them with more correct statements, to accumulate new facts, to discover new principles. This method may be stated as the method of utilizing science in the training of our youth in such a way as to make them scientists themselves. This is the method of the modern University. It is as different in all its results for education and civilization from the Chinese-like methods of the old University as our modern steamship from the great wooden, sail-equipped, wind-driven barks of a century ago.

This particular idea, the notion of training men for practical careers by introducing them to the world of science underlying the career, in such a way as to qualify them to become scientists themselves, is the special contribution of the modern German University to modern education—a contribution as fundamental in this field as the steam engine in the material sphere. I say it is a contribution of the *modern* German system, for it is a result of this century's development and its application on a large scale first in Germany has made its universities the leaders of the world.

Do not misunderstand me, however, at this point. I am not holding up the German University as a model for us to follow. As already suggested, in my opinion, all universities are essentially national institutions. They cannot be transplanted from one country to another, they are so bound up with other institutions, educational, commercial, industrial, military, and ecclesiastical, that they can offer but little of a specific character which can be actually transplanted or directly copied. The German University is so clearly a national institution, so clearly an outgrowth of a history entirely different from our own, of a people radically distinct from us, that we could transplant but little even if we desired to transplant much.

But this underlying spirit indicated above is as universal and as fundamental as human nature itself. This notion of training the student to be an independent, self-reliant, trustworthy investigator of the facts of nature and man as a proper preparation for fulfilling the actual duties of life is an idea which we can apply within the limits of our institutions with as beneficial results as in Germany itself.

If this be a correct conception, we may deduce from this circumstance a further proposition in regard to the modern University. If the true method of university education involves a training of the student to be an independent, self-reliant, trustworthy investigator, on his own account, of the facts of the universe, it goes without the saying that the University Professor, the instructor and preceptor of the student, must be himself an independent, self-reliant, trustworthy investigator. And thus it comes about that the University Faculty must be composed of men who are engaged in the active work of original investigation and research; they must be pressing forward to extend the bounds of human knowledge in every direction, and so the University becomes the great center of the light and life of science. The professors are no longer mere tutors; they are investigators.

The modern University then must be, first of all, an educational institution, an institution for the higher instruction and training of young men and women; it must be, secondly, a great center of original investigation and research. Perhaps it would be better to say that it must be both at once, an educational and a scientific institution, the two being simply in this case the two sides of a simple and unified activity.

If we accept this view of the functions of the modern University, two questions remain to be briefly considered:

First, what branches of science should the University utilize for the purposes of this higher education?

Second, for what callings ought it to undertake to prepare?

The answer to the first question may be formulated very briefly. The scope of the University in this respect is as wide as the scope of human science itself. Wherever there is a branch of human science, there we find a proper subject of university instruction. The various branches of human science have been evolved partly in answer to the material needs, partly in answer to the intellectual and spiritual needs of the human race. They reflect in every variety the manifold tastes, capacities, and aspirations of human beings. Their existence demonstrates their relation to human needs, and justifies their utilization for the purposes of higher instruction, since they will each fill a place which can be taken by no other branch.

In this sense then the modern University will correspond to the ideal expressed by Mr. Cornell, when he declared that he wished to found a center of learning where anybody might study anything. Its motto, to paraphrase a celebrated saying, would be:

Scientiæ nihil à me alienum puto.

"I consider no branch of science foreign to my scope."

Thus the University becomes a center for the study of all sciences. I need not say to you that no actual University has ever yet realized this ideal. The pecuniary resources necessary to such an institution have never yet been put at the disposal of any Faculty and Board of Trustees. Perhaps they never will be, but every passing year will see a steady progress on the part of many institutions toward this ideal. In the meantime, we shall be obliged to select in any given institution and at any given time, that group and combination of the sciences which will, on the whole, come nearest to satisfying the legitimate demands of the society of which we are a part.

Almost any one of the great departments of science could easily employ all the funds at the disposal of any existing institution without spending a dollar uselessly or fantastically. Consequently a judicious compromise, a judicious and fair treatment of all legitimate claims must be effected

in order to accomplish the largest results under a given set of conditions.

I cannot, on an occasion like this, even mention the subjects in detail which the modern University must protect and promote, but a word will not be out of place as to the broad departments which must be represented in any comprehensive scheme of university instruction. I should divide human science, for the purposes of this discussion, into three divisions: (1) The Humanities. (2) The Natural Sciences, theoretical and applied. (3) The Political and Social Sciences.

Certainly the modern University cannot neglect the humanities. They were in point of time the first element in education, they are to-day, in point of order, the fundamental ones. The human being in his literature, in his art, in his philosophy, in his history, must, for all time to come, be the most interesting object to the student. Language, literature, philosophy, history comprehend in a general way the subjects usually grouped under this head. No University can lay claim to the title of University which does not provide for the most careful and detailed study of these subjects. The light kindled on the acropolis at Athens, rekindled and renewed on the seven hills of the eternal city, has streamed down the ages as a beacon and an illuminant to all succeeding generations. May it blaze on for centuries to come! We cannot divorce ourselves from Greece and Rome if we would, we ought not to do it if we could. Our literature, our art, our law, root back in the civilizations of the Greek and the Roman, and as long as our civilization endures will they be subjects of perennial interest to us and our posterity.

Men sometimes talk as if the study of antiquity were a dead and lifeless pursuit, and so perhaps it was a century ago, and as pursued by mediæval methods, but no subjects, not even the natural sciences themselves, have undergone a profounder transformation in a hundred years than the study of the classics. We are no longer contented with a

mere translation of Greek and Latin authors, nor even with a memorizing of their finest passages, nor with an ability to write Greek and Latin poetry. We are to-day concerned with the civilizations which Greece and Rome conferred on the world. We are trying to understand in their inmost parts the work which these great peoples did for us; we are studying their languages, their inscriptions, their monuments, their laws, their institutions, their roads, their everything, which will throw light upon the origin and beginning of things, of the things which we have, of the things which we have inherited from our ancestors, and which we should transmit to our posterity.

We are beginning to find that they have been much misunderstood. It is gradually dawning upon us that even they and their laws and institutions do not mark the beginning of things for us, and that instead of being our first intellectual ancestors, they are far along the line of descent. Following up the line, we find that Babylonia, Assyria, Egypt have a relation to us and our work of which we never dreamed. Human history has been rewritten again and again, and we are not yet satisfied with its results as a finality. The unthinking may consider that a history once well written must be good for all time. Not so. Each generation demands that history shall be re-written for it. We of to-day are interested in new issues. We care for different things from those which interested our ancestors, and when driven by an irresistible desire, we ask what antiquity thought of these things, what answers its sages made or would have made to these questions, what solutions they would have offered for these problems, we find no reply in existing histories of antiquity. We must then go back to the sources again and re-write the whole story from this new point of view in the light of our ever-increasing knowledge of ancient conditions revealed by the uncovering of the great stores of wealth in Greece and Asia and Egypt. Thus it comes about that if you were to arrange on a shelf the histories of Rome for example, which

have been written in the last century, you could almost reconstruct the history of our own century by studying them as products of the intellectual tastes and aspirations and ideas of each successive period. And all this work is no less scientific than that done in the physical or chemical laboratory, and such work is no less disciplinary than the study of mathematics or astronomy. So long as the study of antiquity is thus pursued it cannot be dead or lifeless or dull, but must remain one of the most suggestive and inspiring of intellectual pursuits, and consequently a most appropriate and necessary university discipline.

This means that the modern University must make collections of monuments, inscriptions, objects of art of these ancient civilizations; that it must do its part to uncover the remains of these ancient civilizations which are still to be found on the plains of Babylon, in the valley of the Nile, or at the foot of the sun-kissed hills of Greece. It means that the University must make ample provision in its museums and laboratories for the scientific study of these subjects as well as for the scale on fruit, or other disease of the tree or plant. Egypt, Assyria, Babylon, Greece, Rome, our own line of intellectual ancestry, must ever command our care and thought, and what is true of these must also be true of the later line of mediæval and modern Europe with all that that implies of language, art, literature, and institutions.

It is scarcely necessary before this audience, and at the close of the Nineteenth Century, to say a word in defense of the natural sciences. They are to-day on the upward move in every great center of learning. In crossing the campus of the University of Chicago not long ago, I noted that of the nine great buildings devoted to educational work, seven are devoted to natural science alone. This proportion is everywhere the same, and there is no prospect that it is likely soon to diminish either absolutely or relatively. In this all lovers of their kind must rejoice; natural science is the great distinctive feature of modern

life and thought. If we compare our civilization with that of the ancient world, we shall see that at countless points it is superior, and in many of these points it is superior because of our recognition of, and devotion to, natural science. From the material point of view this is universally acknowledged, but it is equally true in the spiritual and moral world. The altered attitude toward the universe which the serious study of nature requires in man has had countless reflex influence upon his whole mental and moral nature. Truth has a new significance, a new power, a new beauty, as a result of the new content which natural science has put into it, and it is the reflex action of the study of natural science which has revolutionized all study of art, of literature, of language, of philosophy, of history. We are only at the beginning of this influence which is destined to have an ever widening sphere as the ages roll on. The development of natural science first gave a sound basis to engineering, to sanitation, to medicine in all its forms, to agriculture and industry, and certainly in no departments of life have our modern achievements been greater than in these. We surely need not lose a word further on this topic. The modern University must be a University of natural science as well as of the humanities, and that in a sense far more full and adequate than we have thus far even dreamed of.

One word I should like to venture on the wider moral and intellectual results of the spreading study of the natural sciences. We are just beginning to carry it down into our lower schools, through the high schools, the lower grades, into the very primary school itself. Under the term Nature Study we are beginning to interest even the little children in the great world of nature about us, and this movement is to my mind fraught with far reaching consequences. A healthy interest in nature would counteract the unhealthy interest in a thousand injurious things which the artificiality of modern life thrusts into the foreground. Gladiatorial combats, bull fights, cock fights, prize fights, low class

theaters, "yellow journals" would all be impossible among a population whose members were really interested in the growth of the daisies at their feet, the flight of birds in the air about them, or the silent sweep of the stars above their heads. If we could bring the average man in our society to have a keen and intelligent interest in the phenomena of nature with which he comes into daily contact, the result would be a mental and, in my opinion, a moral revolution of the greatest benefit to mankind. And all this takes no account of the immense impetus to invention and discovery which such an interest in nature would doubtless bring in its wake, and the consequent increase of our material wealth and social comfort. Our universities and university men should labor, it seems to me, in season and out of season to put the results of Nature Study into such a shape as to be available for instruction in the very lowest schools. With such a general interest in the people at large as would be the outcome of such a movement, no one would need to complain of lack of funds for the endowment of scientific research.

A word as to the third division of the sciences—the political and social sciences, that department of science which deals with the human being as a social and political animal, and studies his characteristics in organized human society. These are the newest of all the sciences, and if they are not the most important, they can certainly lay claim to a consideration which up to the present time they have not enjoyed. Auguste Comte, you will remember, in his great attempt at classifying human science, places sociology, the science of society, at the top of the edifice, calls it the queen of the sciences, the crown and cap-sheaf of human development. Whether this be true or not, it is certain that it is the latest of the sciences, and that for the reason, that in order to its development the establishment of the other sciences was first of all necessary. The humanities and the natural sciences furnish the material from which the great generalizations of a social science must be drawn. We cannot lay down any principles as to the organization

of the human society of the future until human history on the one hand has given us materials from which to draw conclusions as to the real nature of man; and natural science, on the other, has shown the limitations within which man must move.

The importance of social science is now pressing itself upon us more vigorously every day. By the aid of natural science we are fast coming to a point where our further conquest of nature is limited by nothing which we can see except the possibility of devising a form of social organization under which continued progress is possible. As we look back over human history, we see how each great nation in turn has found it impossible to devise a scheme of society which would allow progress and permanence at the same time; that just in proportion as it secured stability it lost the possibility of progress, and in proportion as it secured progress, it lost stability. Thus the empires of Egypt and Assyria did not succeed in establishing individual human freedom, a prime condition of a steadily advancing civilization, and they finally went to pieces on that rock. Greece secured a high degree of fluidity, gave personal freedom a chance to develop, but its career was lamentably short. China has secured stability, but it was at the cost of progress, and the whole nation seems to afford a most striking case of arrested development.

We are face to face with the same issue to-day in western Europe and the United States. Are we going to sacrifice progress for the sake of some supposed advantage, like equal distribution of property? What line will our social democracy ultimately pursue? Who can tell? Certain it is that if we cannot devise some form of social and political organization which will secure liberty and order, progress and stability, our history will be like that of past ages. In this work the political and social sciences should take a large part; and the University must protect and promote these sciences as fully and as adequately as it cares for the others.

There is, moreover, another consideration applicable to these sciences in a very similar way as to the natural sciences. They should not be left as mere postgraduate or university studies. They must be carried down through all our grades of schools,—colleges, high schools, grammar schools, and primary schools, just as in the case of natural science. To the training of the citizen the results of these sciences are of special importance. University men should labor here also to make the results of their science usable in the work of the lower schools. Social study must become as universal, as characteristic, of all schools as is the study of literature and of science.

Our second question now remains to be answered.

For what careers should the University undertake to prepare?

The general answer to the question may be deduced from our general consideration on the University and its scope. All those careers, a suitable preparation for which can be found in the study of the sciences which underlie the art of the career, are proper objects of university recognition.

Here again we are met by the historical or actual University. No existing University has undertaken to occupy fully the field thus outlined for it. No institution has thus far had the requisite funds, but the tendency of development has been steadily in this direction. The University and College were originally only for the priest; they were primarily schools of theology. They gradually became also schools of law, of medicine, and in their so-called faculties of philosophy and graduate schools, also schools of pedagogy and science in the wide sense of that term. They then took up agriculture and engineering, and with these subjects we have reached the general scope of the actual University of to-day. It offers in its best specimens facilities for the higher training of our teachers, university, college, and high school; of our medical men—physicians, dentists, pharmacists, veterinary surgeons; of our lawyers; our engineers, civil, mechanical, electrical; and our farmers.

It is evident from this exposition, if it be based on sound principles, that the University cannot stop at this point, that so far from having reached an ultimate form, we are only, so to speak, at the threshold of a wider development than any we have experienced to the present. Other callings, other professions, must also come within the scope of the University; the artist, the musician, must ultimately find here the most satisfactory form of training, since it will rest upon and include a knowledge of the sciences underlying their arts, as well as of the arts themselves. As soon as a calling or profession is differentiated from others in our society in such a way that a scheme of higher training based upon science may be elaborated which will be of use to the future followers of that calling, such provision will fall legitimately within the scope of university recognition.

One great step in this direction lies now plainly before us. One door stands widely open which we should enter. There is a great field of human life involving the practice of an art or arts based upon human science, a field in the training for which the University has thus far taken little interest. I refer to the field of commerce and business.

The next great expansion in the field of university instruction must consist in adequate provision for the higher education of the future business man. It may not be out of place, therefore, to dwell for a moment upon the considerations in favor of such a step.

Why should the University organize and equip a College of Commerce? Put it upon the same basis as other colleges, and devote itself in the same serious way to the problems of higher business education as it has done to education in medicine and the law? Why, in a word, should it strive to make business a learned profession as well as law or medicine?

In the first place, because the control of modern society is passing with ever increasing rapidity into the hands of our business classes, and if we would have our governors act in that humane and liberal spirit, supposed to be the

outgrowth of university education, we must attract at least the leaders of this great department of modern life within the charmed circle of university influence, and this can only be done by offering them something which it will be worth their while to take. The modern world is ruled by commercialism. Shall it be a narrow, bigoted, self-seeking commercialism, or a high-minded, broad-spirited, far-seeing commercialism? To my mind, the answer to this question will turn largely upon whether the University will do its duty or not in respect of sound commercial training.

The governing classes of Europe are largely hereditary or professional—the army and navy, the lawyer, the physician, the priest, the great noble, have absolutely dominated European politics down to within a time quite within your memory and mine. The man who is in active trade is not yet admitted without serious question into society in any European country. But even there, the drift of power into the hands of the business classes, bankers, manufacturers, traders, railroad men, insurance men, is unmistakable; and will doubtless advance with every passing day.

With us the development is complete. Our boys are dreaming, not of becoming great generals or admirals, unless indeed our recent glorious victories upon the seas may turn their attention for a short time in this direction, or statesmen or lawyers, or even physicians. They long to be great business men, manufacturers, merchants, railroad and bank presidents, etc. We have lately seen a great retail merchant made Postmaster-General. We have seen an iron manufacturer fill the second place in the attention of the country during the last presidential campaign. We see railroad presidents, bank presidents, presidents of the great corporations dominating and shaping national and local policy on every important point. Even lawyers, when they rise nowadays to distinction in active politics, do so by virtue of their business rather than their legal qualities. There is no probability that this tendency will be reversed. With the advance of peace to the normal condition of this

world—and thank God this is becoming increasingly so in spite of war and war's alarms—the leaders in the arts of peace will dominate mankind more and more. Our only hope of securing in our future development that legitimate influence for science, for letters, for the humanities, which belongs to them in view of their importance to civilization, lies in the possibility of bringing the future business men of the country within the active influence of the university and university life. This can be done when the youth who aspires to become a leader in industry comes to look upon a university training as of the same value to him as the prospective lawyer or physician, and this can come only as the result of a provision for the higher training of business as complete, as adequate as that now given for law, medicine, teaching, farming, or engineering.

But university education for business men is justified not only by the general interest of society as a whole in the higher education of such an important class, but also by the interests of business itself.

Our historians have done but scant justice to the fundamental importance of improvements in commerce and politics to the welfare of our modern society. We sometimes talk as if our modern civilization were due solely to the printing press, the steam engine and electric telegraph, and the thousand and one smaller devices which are grouped around these. These inventions are fundamental doubtless, but the first two, and perhaps the third had been discovered long before our time by nations which were old before ours was thought of. But social and commercial conservatism, the inability to devise business and political forms and machinery through which these inventions might have a chance to work, prevented them from getting beyond the stage of amusing toys.

The characteristic success of the modern world rests quite as much upon its improvements in politics and business as in the field of engineering and invention. Modern commerce and industry would have been impossible if we

could not have devised a political machinery which made possible large nations, which were also free nations. The representative system of government is, for aught that we can see, at least for our day and generation, an absolute essential to that political organization which, securing at once liberty and order over whole continents, makes possible such a society as our own. The discovery or invention of money, of banks, of the bank check, of the promissory note, of the clearing house, of the joint stock company, of the insurance company, of the double entry method of bookkeeping, are of as fundamental importance to modern society as any equal number of material inventions you can mention. So fundamental is the element of money, for example, that able philosophers have divided human society into three stages, the barter economy, the money economy, and the credit economy, according as men carry on their exchanges by means of barter, money, or credit. No one can study seriously the world of commerce, business, and politics without becoming convinced that we are to-day at more points than one face to face with obstacles to our progress which cannot be removed without some changes and improvements in our political and business devices. Look at our legislative bodies, for example, city councils, state legislatures, national congress; we are in mortal terror when they meet, and heave a sigh of relief when they adjourn. What a condition of things for a free people! The defect must be remedied in some way before we can make advances commensurate with our possibilities. We know that certain problems of our society cannot be settled without a more active interference on the part of the government, and yet we are afraid to trust this power of interference to our legislative bodies as constituted. Our constitutions read like a series of thou-shalt-not, as if we were in mortal terror of our own representatives playing us false at every turn. Surely here is ample evidence that we need some power of political origination in inventing devices for overcoming as far as possible this serious obstacle to our progress.

Look at the banking and currency situation in the United States to-day. Here is a branch of business comparatively simple in its organization, resting in the last analysis upon principles, every one of which is scientific in its nature, and yet for over a generation we have been toying with our banking system. We adopted our present one in the first place, not because it was a good banking system *per se*, but because it enabled the government to borrow easily large sums of money. It is a system which, while it has certainly excellent features, is of such a character as surely to lead to its modification and perhaps ultimate overthrow as soon as it is brought to the test of scientific principles. What have we been doing with it? We have stood by and watched it dry up as a bank of circulation system with all the results of popular dissatisfaction which such a tendency is sure to engender, seeing it gradually, owing to this fact, become a most dangerous element in our monetary system, and finally, as the clouds grew thicker, saw the storm burst upon us in the year 1893, with the resulting five years of misery and desolation, and to-day we seem to be but little nearer an agreement than four years ago, with the possibility of having to fight over the same old issues again with all which that means of inconvenience and distress. A more striking testimony to the need of universal education in politics and economics than has been afforded by the United States in the last ten years is not to be found in human history.

Now I urge that if our business classes were educated as the leaders in financial matters ought to be, we might have escaped this condition. The people perish for lack of knowledge to-day as they did three thousand years ago in the time of the Hebrew prophet.

Do not misunderstand me. I do not claim that the University *per se* can settle such questions, or that the faculties of colleges of commerce and politics could solve such problems of themselves, but if every University were a seat of research and investigation into these questions, as

it is becoming for medicine, for chemistry, for physics, I claim that the young men who go out into life with the benefit of this scientific training would be in a position to offer solutions for such practical questions, just as the engineer, who has had a scientific training in the technical school can build a Brooklyn bridge or a twenty story building; though neither of these problems was solved for him in the schools.

I am not presumptuous enough to imagine that I can propose a plan for the solution of all our economic and political difficulties, nor do I believe that any other college professor, or even all the college professors taken together can do so. But I do believe that if economic and political education, lower and higher, were better organized and more general, men would be found among such trained classes who could propose such solutions, and I am, moreover, sure that with a more general diffusion of economic and political knowledge such men could lead aright the masses of men from darkness to light on these subjects.

Again, if our business men can be brought to give the same patient attention to the scientific study of their business as the physician or engineer gives to the scientific study of his, we should see marvellous progress in commerce and industry in directions now unknown.

We have a striking example to-day of the defects in our business system which would be remedied, in part at least, by the training which the University might give. We have reached a point where we can produce far more goods than we can market, and yet we are doing next to nothing to enlarge the possible markets open to us. We are not studying foreign markets, or foreign languages, or the tastes and ideas of foreign peoples in any large and systematic way. I have gone into some of the largest manufacturing and mercantile establishments along the Atlantic seaboard to make inquiries as to their foreign trade. It is not too much to say that as a whole they have not thought of the possibility of selling their goods abroad. They have no

man in their employ who can speak foreign languages, except possibly the unskilled workman, or here and there a foreman in the shops. No member of the firm speaks foreign languages. No attempt has been made to study foreign needs, and yet for five years many of them have been working on half time, and complain that there is no sale for their goods. A university training of the right sort would at least have directed the attention of these men to the possibility of foreign trade, and have equipped them to study the problem intelligently.

I believe in all sincerity that the scientific study of business and of politics, using the latter term in a large sense, as the art and science of government, would be followed in the long run by as remarkable improvements in this field of our national life as have followed in other departments upon an adequate development of scientific centers at the universities.

There is a third consideration in favor of the establishment of such departments, and that is the needs and wants of the young men themselves who are about to enter upon a business career. If a young man to-day desires a higher education before entering upon the routine duties of business life, we offer him the chance of getting it along some line quite outside of the range of his interest. He may study law or medicine or agriculture or letters, but he cannot study business. The result is that only a small fraction of those intending to enter business life ever get a higher education at all. How small the proportion, you can appreciate if you were to reflect upon how many of the future physicians of the community would attend the University if their only chance for a higher education consisted in the opportunity to study law. Those young men in the community desiring to follow business pursuits, have the same right to ask the University to consult their needs and wants, as those intending to enter the so-called learned professions. It is right for the University to offer facilities for youth who desire to study medicine, law, engineering,

letters, science, and agriculture; but it has no right to neglect those other equally important classes who desire to enter commerce and business in the largest sense.

One other consideration ought not to be left unnoticed, and that is the effect of such departments upon the interests and welfare of the universities themselves. The University by establishing such departments will broaden the basis on which it rests, and thus strengthen its hold upon the interest and affection of the community. The University must become the institution of the people, that is, it must answer all the needs of the people for higher education, based upon scientific study, if it is to appeal successfully to the public and the state for adequate support. As long as the University was a mere college, as long as it was a mere department of letters and science devoted primarily to educating teachers for our schools and colleges, or preachers for the churches, it was understood and appreciated only by a comparatively small number of people. As long as its curriculum was narrow, however valuable it might be otherwise, it was attended by but few students. With every increase in subjects of the curriculum, with every added department, its hold upon the community has deepened and strengthened. As long as the university or college served the needs of only a single class, it was on the defensive. As long as the lawyer and physician and engineer and farmer entered upon their careers and pursued them successfully without any higher education, without any special training, they found it difficult to appreciate the reason why the teacher or clergyman should not do the same. But when the University undertook to supply all the legitimate needs of the community for special education along higher lines, it gained new friends with every passing year. When the leaders at the bar, in the various branches of medicine, in the many callings of engineering, and in agriculture become university-trained men, they develop a sentiment in favor of higher education that no public apathy or ignorance or opposition can breast. Add to this list the

leaders in commerce and politics, and our influence for good will surpass the anticipations of our wildest dreams. Public and private donation will keep pace with our growing needs, and the University will finally fill that position which seems of right to belong to her.

My friends, I have thus set forth in brief outline my conception of the position of the modern University in modern life. It is at once an educational and a scientific institution, intended primarily for the higher training, for the work of life of properly educated young men and women, meaning by higher training the training in the sciences underlying the various careers. It is also an institution for the cultivation and diffusion of scientific knowledge in the largest sense of that term. It is, in a word, an institution for the scientific training of the leaders of society in all departments of life. Its function is to train teachers, lawyers, physicians, engineers, journalists, farmers, business men, in such a way that they may do the highest and best work in society, not merely for themselves, but for society as a whole.

I have thus spoken of its direct, and what may be called its immediate function of training by scientific methods to the ability to do scientific work. There is another important, perhaps the most important function of all, since it lies at the basis of the others. That is the function of the University in the moral training of the youth in its charge. It follows, from the peculiar position of the University in our educational system, that the young men and women will be under its charge during two, three, four, five, six, and seven years, from about the eighteenth year on. As the University is an institution, it becomes in a certain sense an organism. It is not a mere collection of individuals, but a high type of organized life, with its own peculiar nature, its own organs of assimilation and expression. It becomes for the time being to the student his world. It exercises something of the same powerful influence over his life, his conduct, his standards, his ideals

his modes of thought, as the family and social circle from which he came, and as the life and society into which he will go. It becomes, then, of the highest importance that the University which takes the student, a raw and callow youth, and turns him out a man among men, shall be so organized and administered as to help all the upward tendencies in the youth, and be to him a gentle, guiding hand toward all that is beautiful and good, as well as toward all which is true.

It should inspire affection in him, which he should feel not only in after years, but now, as an existing and working force and motive in his actions. The Alma Mater should be a cherishing mother from the start, a help in every time of trouble. Here we touch upon the most difficult problem perhaps within the whole range of university activity. No University can take the place of the parent or of the home, and as long as the youth stands in need of these things as ever present elements in his life, he should remain at home and not be sent to the University. No University can take the place of the church which, with its all-embracing activity, should lay its hand with gentleness and love upon the growing youth. But the University may do in the way of moral training a work that neither the family nor the church can do so efficiently, and if in this respect the University does not do its duty, it fails at one of the most important points in its sphere of activity.

After all, we are engaged in training men and women, and not mere automata. Our product should be first of all, then, men and women, and only in the second instance lawyers, physicians, teachers, or rather it should be one and the same. I am not speaking here of moral training in any narrow sense—least of all of religious training alone—something for which the University can perhaps do little; but of moral training in that wider sense of shaping the youth to the society in which he lives, of preparing him for the greatest usefulness as a citizen, of inspiring him with high ideals as well as correct ideas; of fitting him to

become socially, economically, politically, a member of civilized human society. The ideas and notions, standards of morals, of conduct, of life, characteristic of student bodies, are not always what they should be. The University should strive continuously and consciously toward creating an atmosphere in the institution in which all shallow, ignoble, passionate forces shall give way to their opposites, so that when students say or do anything as a body, the world will be constrained to say how wise, how proper, how sensible! In this work the University is bound to look after the social influences prevalent within its domain, not in the sense of attempting to control in any vexatious way the habits and conduct of its students, but in the sense of creating an active social influence, and an active social environment, which will uphold all good influences at work within the life of the student. It should provide for healthful and stimulating personal intercourse between the students, and between students and teachers, and between teachers and teachers. It makes one's heart bleed to see how careless many of our great institutions are in this respect, leaving, as they often do, the entire provision for the social life of the institution to outside agencies, which sometimes have their interest in giving it an injurious turn.

Again, certainly no University is doing its duty to-day by the students in its care if it does not look adequately after their physical health and welfare, as well as the social and scientific. A sound mind in a sound body should be one of the mottoes of the University. Every university man should be a model to the rest of the community, not merely in his scientific attainments, not merely in his moral character in the narrow sense of that term, but in the care for his body and in the manners of his social intercourse. These last characteristics the University should care for, not merely as a more or less accidental accompaniment of scientific training, but as one of the essentials by which its usefulness to the community is to be judged.

The whole problem from this point of view may be summed up in the words of the apostle: Whatsoever things be true, whatsoever things be honorable, whatsoever things be just, whatsoever things be pure, whatsoever things be good—these are the things for the University to cultivate by every means in its power, and when university men come to be known in every community as the men who *par excellence* are true, honorable, just, pure, and good, the future of the University will take care of itself.

Friends, in closing I may be pardoned a word of congratulation. Surely we who have joined this great movement for the building up in the United States of ideal university foundations, have truly followed Emerson's injunction, and hitched our wagons to a star. Through many discouragements and difficulties, through storm and stress, we are pressing on to organize a series of institutions from the Atlantic to the Pacific which will bear comparison with the best of the old world foundations, which will be as well adapted to the needs of our society as their institutions to theirs. As students, as professors, as trustees, as donors, whether in the form of gifts or taxes, we may surely be proud of the results thus far achieved, though they be only a modest beginning.

We are helping to train the leaders in modern society, and thus we shall touch and vivify every phase of our national life. The University should be like one of your mountain streams, which divided into a thousand refreshing brooklets, permeates, refreshes, revivifies, renews the entire country, here turning a wheel, there causing the desert to blossom as a rose, yonder delighting the heart with new visions of grace and beauty.

It is with no spirit of pharisaism that we should go out into the community to do our work, none of the "I am holier than thou" attitude; but with humility, with a deep sense of responsibility to our fellowmen and to God, to toil on where our lot may bring us and return to our fellowmen what they and their predecessors have done for us.

Friends, we are entering a new century, and if present indications on sea and land do not mislead us, a new era. We believe that a future of boundless prosperity awaits our glorious country. But even to the dim sight clouds are visible on every hand. We cannot see clearly our way for any great distance into the future; we are after all walking by faith rather than by sight. The touch of the gods is upon us. The mighty Father of us all is leading us by ways unknown to ends unseen. Upon us, as university men, rests a peculiar burden and responsibility. The light of science must be fed until it can cast its searchlight far down the dim vistas of futurity. Ours is especially the task to do this, but it is no less our task to train the youth in our charge so that they can bring those moral qualities to supplement our science without which all our knowledge is as a sounding brass and a tinkling cymbal.

Young friends, who are to leave these classic walls to-day for the stern duties of life in the great world beyond, remember that you bear Caesar and his fortunes. If in the communities to which you go men and women shall say while contemplating you and your work: "these are university men; blessed be the universities," we need have no fear that endowments and grants shall not come to us; but, if looking upon you, your fellowmen say: "these are university men; cursed be the universities," then will indeed all our toil be in vain, and our career short.

Let us, one and all, patrons, trustees, teachers, students, gird up our loins for a new start, being sure that if we run a good race to the goal plainly set before us, succeeding generations will rise up and call us blessed!

SPAIN'S ECONOMIC POLICY IN AMERICA.*

By BERNARD MOSES.

A fact of great importance in revealing the economic characteristics of Spanish rule in America is, that discoveries and settlements were usually made, not at the expense of the state, but with private funds. If at any time the crown made advances for the support of an expedition, it was regarded as a loan to be repaid out of the first proceeds of the undertaking; and assurance was given that the settlements should remain under Spanish authority. A decree of Charles V., which has been incorporated in the laws of the Indies, affirms that in recognition of "the fidelity of our vassals, and the pains which the discoverers and settlers experienced in their discoveries and settlements, and in order that they may have more certainty and confidence of these always remaining united to our Royal Crown, we promise, and pledge our faith and royal word, in behalf of ourselves and the kings our successors forever, that their cities and settlements, on no account or reason, or in favor of any person whatever, shall be alienated or separated, wholly or in part; and that if we or any of our successors should make any gift or alienation, thereof, contrary to this express declaration, the same shall be held as null and void." However benevolent may have been the King's intentions which found expression in this decree, it is now clear that these intentions could not be carried out, that the

* Extract from a paper read before a convention of teachers in Los Angeles, March 30, 1898.

sovereign of Spain could not bind his successors, and, moreover, that this pledge was later actually violated.

One of the earliest features of Spain's economic policy, with reference to America, was the adoption of the system of *encomiendas*. This system involved the granting of lands to Spanish subjects, together with authority to command the services of a certain number of Indians. The Indians were expected to cultivate the lands, and thus make them a source of income to those persons who had received them from the king. In the contemplation of the law, the Spanish settlers held Indians in service not merely for the profits of their labor, but also for the purpose of teaching them the Christian doctrine, and of defending their persons and property.

Although this system placed the Indians in the position of serfs, the conduct of the Spaniards in this matter was not without its apologists. It was urged that the condition of the Indians was in some sense improved by the conquest; human sacrifices were abolished, and through the introduction of mules the Indians were released from at least a share of their oppressive and degrading occupations. "The Indians whose liberty had in vain been proclaimed by Queen Isabella, were till then slaves of the whites, who appropriated them to themselves indiscriminately. By the establishment of the *encomiendas*, slavery assumed a more regular form."^{*}

The fundamental idea of the commercial and industrial policy of Spain, as carried out through the India House, was that of restriction and privilege. It involved the granting of exclusive privileges to certain persons or companies, and to certain ports; and it was expected by the holders of these privileges that the monopolies which they had received would continue to be maintained. But they found in the course of time that, by reason of the growth of contraband trade, they had to engage in sharp competition, and that, instead of being a source of profit, their

^{*} Humboldt, "New Spain," I, p. 181.

undertakings threatened to lead to their ruin. With this prospect, the companies sometimes made effort to induce the government to compel their privileges to be respected. To have enforced a strict observance of these privileges might have given a temporary advantage to the holders of them, but the colonists would have suffered in consequence.

While the trade with America was required by law to pass through Porto Bello and Vera Cruz, the southern part of the continent was invaded by European wares through the contraband trade of Portugal. This and the subsequent concessions in favor of Buenos Aires appear to have alarmed the monopolists of Peru. Buenos Aires, which had hitherto been a closed port, was permitted to receive two small vessels from Spain, and the Peruvians feared that the wares brought in these ships and entered annually at the port of Buenos Aires, would render unnecessary a resort to the Peruvian markets, and that these wares would be even carried across the continent and introduced into Lima, thus violating the Peruvians' exclusive control of the trade of the western coast.* Against these concessions and the illicit trade of the Portuguese, Peru raised a vigorous protest. It was, moreover, a violation of the strictly protective system, under which Spanish America was held, that trade should be found following lines not marked out by the prescriptions of the law. To avoid these disapproved results, the Council of the Indies established a line of custom-houses in the interior of the continent, separating the provinces of La Plata from those of the Pacific. The flocks and herds multiplied on the rich plains of Uruguay and Buenos Aires, but without a market they were without value.

In the trade in hides, under the limited privileges extended to the port of Buenos Aires, it was required that

* Don Jose de Armendaris, viceroy of Peru from 1724 to 1736, said: "Es Buenos Aires la ruina de los dos comercios, la puerta por donde se le huye la riqueza, y la ventana por donde se arroja el Perú. Es un lugar de encanto, donde un real permiso se transforma en una infiel usurpacion y donde aún la plata inocente va culpada. Contra este fatal daño ha clamado siempre este comercio; contra él se han expuesto los jueces y contra él han se agotado las providencias." See Pelliza, "Historia Argentina;" I, p. 91.

these hides should be of a certain size. But it happened that about three-eighths of those secured by the method in vogue for slaughtering the animals were too small and had to be rejected. Besides the hides, the only other portions of the animals then preserved were the tongue and the fat.* In the first half of the eighteenth century the price of negroes at Buenos Aires was from one hundred to two hundred dollars apiece.

The growth of Buenos Aires during the first two decades after its re-establishment in 1580 was so slow that in 1602 it contained not more than five hundred inhabitants besides the Indians and negro slaves. The increased freedom which the people of Buenos Aires obtained in the course of time gave an important impulse to progress in this province. Paraguay, on the other hand, became isolated; the immigration to this interior region was, in large part, intercepted by Buenos Aires; and some portion of the territory, in the hands of the Jesuits, felt the paralyzing effect of ecclesiastical socialism. Paraguay's long conflict with Brazil still further impeded her advance in material prosperity. Progress in Buenos Aires, even if it outran that of Paraguay, was hindered by the lack of effective incentives to immigration and enterprise. When the Indians of Rio de la Plata were subdued and the lands explored, the Spaniards did not turn with a great enthusiasm from a life of exciting adventure to the tame existence of a farmer or a herdsman. To make the rich plains of Buenos Aires give up their wealth required persistent labor, but it was not for this that the bulk of the Spaniards had sought the New World. In the discovery and development of mines, as they were found in Mexico and Peru, there was always an opportunity for severe labor, but there was also the possibility of great rewards. In carrying war into the wilderness against the Indians, there were, moreover, always difficulties and dangers, but there was also the possibility of capturing a

* Letter of Cajetan Cattaneo, dated Reduction of St. Mary, Paraguay, April 30 1730, printed in Muratori's "Missions of Paraguay," p. 250.

prince, whose ransom might suddenly enrich an army. Therefore, after the period of the adventurers was passed, and the affairs of the province had assumed a settled order, Buenos Aires was outrun by other colonies in the competition for settlers to aid in the development of her resources.

If the material development of Buenos Aires was rapid in comparison with the towns of Paraguay, it was slow in comparison with the growth of certain towns in the mining regions, and this slowness was due in a large measure, among other things, to the fact that Buenos Aires had been a closed port. If later certain concessions were made, favoring a limited amount of direct trade with Spain, there was revealed in this no intention to depart from the general policy which had been adhered to previously. The concessions made in the first half of the seventeenth century failed to satisfy the inhabitants; for while a certain amount of freedom was granted on the east, trade with Tucuman and Peru was cut off on the west, except on the condition of paying a duty of fifty per cent. This duty indicates that the Spanish administration had not departed from its restrictive policy, for the purpose of this duty was to increase the prices of goods imported to the western provinces by way of Buenos Aires, in order to make them equal to the prices of goods brought by the established route of Panama, and thus to prevent the shipments to Buenos Aires from interfering with the monopoly of Peru.*

An important feature of the trade with America was the traffic in slaves from Africa. Black slaves were introduced into Spain as early as 1442, and the modern trade in negroes began about that time. In the "year 1444, Europe may be said to have made a distinct beginning in the slave trade."† Slaves were first carried to the Spanish Islands in 1503.‡ Several negroes were conveyed to America as early as 1510. They were taken on the private account of King Ferdinand. But in 1516 the exclusive privilege to

* Mitre, "Historia de Belgrano," I, p. 33-39.

† Helps, "Spanish Conquest," I, p. 51.

‡ Pradt, "The Colonies," p. 80.

transport negroes to America was granted to a person named Chevis, who ceded this right to a company of Genoese merchants for the sum of 23,000 ducats. The first negroes dispatched under this privilege were one thousand sent to San Domingo, in 1517.*

After the recommendation of Las Casas concerning the importation of negro slaves had been adopted, it was thought that four thousand would be adequate to meet the immediate demands. By the *asiento* of 1517, Charles V. extended the privilege of this trade to De Dresa, a Fleming, under the assurance of a monopoly for eight years, which had the effect of increasing the price of negroes. In the last years of the sixteenth century, Philip II. had great need of money, and he sought to procure it by granting for a consideration the exclusive privilege of the slave trade with America. Gomez Reinel held this privilege from 1595 to 1600, when it was granted to a Portuguese named Juan Rodriguez Contineo, who agreed to furnish to the Indies annually 4,250 slaves, and to pay to the crown 160,000 ducats. On the death of Rodriguez Contineo, his privilege and obligations under this contract fell to his brother, and at the time of the transfer the annual payment to the crown was reduced 22,000 ducats. A few years later, in 1615, the *asiento* was granted to Antonio Fernandez Delvas, for the period of eight years. Delvas was a Portuguese, and under his contract he was obliged to introduce into America each year 3,500 slaves, and to pay 115,000 ducats to the crown. At the expiration of the period of this grant, the *asiento* was assigned for another eight years to another Portuguese, Manuel Rodriguez Lamego, who agreed to introduce the same number of slaves, 3,500, but to increase by 5,000 ducats the annual payment. During the eight years following 1631, the contract called for a payment to the crown of 95,000 ducats, and the introduction of 2,500 slaves. After this period there was an interruption of this form of the slave trade till 1662. In this year the *asiento* was granted

* "Present State of Peru," p. 89.

to Domingo Grillo and Ambrosio Lomelin, for a term of seven years, during which they were required to introduce 24,500 negroes, and pay the king 2,100,000 dollars. In 1674, the privilege of this trade passed to Antonio Garcia and Sebastian de Siliceo, who were required to import annually 4,000 slaves, and pay 450,000 dollars. Owing to a failure on the part of this company to comply with the terms of the grant, it was recalled in 1676, and conferred on a company in Seville. In 1682, the privilege of this trade was granted for five years to Juan Barroso del Pozo and Nicolas Porcio, residents of Cadiz. They had agreed to pay 1,125,000 dollars, but, as they failed in this, the contract was transferred to a Hollander, Baltasar Coimans. Prior to this time the holders of this privilege had been Europeans, but in 1692 it was assigned to Bernardo Francisco Martin de Guzman, of Venezuela, for five years, on the payment of 2,125,000 dollars. He was followed, in 1696, by the Portuguese Company of Guinea, who held the *asiento* for six years, after which it passed to the French Guinea Company, and finally, by the treaty of 1713, the monopoly of the slave trade with Spanish America fell into the hands of the English.*

The trade in negroes, which was authorized by the treaty of 1713, afforded opportunities for extending the contraband trade, particularly with Buenos Aires. But the confusion engendered by the hostilities between England and Spain, which followed, was even more favorable to this end than the ordered conditions of peace.

The restrictive policy, as it was carried out through the India House, did not realize the magnificent expectations of Spain. At this time Spain had clearly the position of supreme advantage in the world. She was the leading power in Europe, and she owned the larger and better half of this continent. But under the influence of a policy of

* Calvo, "Coleccion Completa de los Tratados de la America Latina," II. pp. 53-55; for the *Asiento* of 1696, see pp. 5-42; for that of 1701, see pp. 60-77; for that of 1713, see pp. 78-101; also "The *Asiento*; or Contract for allowing to the Subjects of Great Britain the Liberty of importing Negroes into the Spanish America." London. Printed by John Baskett, 1713.

commercial jealousy, "her population declined, her manufactures were ruined, her merchant marine ceased to exist except in name, her capital was diminished, foreigners carried on her commerce by means of contraband, and all the gold and silver of the New World found its way to other countries than Spain."^{*}

But when the opportunities of two centuries had been thrown away, the king of Spain was compelled to acknowledge that the system which had been wrought out with such astonishing care and diligence and upheld by a marvelous administration, was a disappointment and a failure. He accepted the actual condition of things into which the trade with America had drifted in spite of the law, and even extended the privileges of trade to ports which had hitherto been closed. In 1764, ships for America were allowed to depart from Corunna for all the principal ports of the Spanish colonies, and to return thither with their cargoes of colonial produce. Ten years later, in 1774, the several Spanish colonies were permitted to trade with one another. In 1778, there was promulgated a new commercial code for the Indies, which enlarged the freedom of trade between Spain and her American possessions, but did not extend this freedom to other nations. According to the king's view, as expressed in the introduction to this law, to grant freedom was the only means of re-establishing in their ancient vigor the agriculture, industry, and population of his dominions. Moved by this consideration, he opened various ports of Spain to the American trade, and a little later, in February, 1778, made concessions to the provinces of Buenos Aires, and to the kingdoms of Chili and Peru. Finally, in October of this year, the new code was established; and it was provided that it should contain all the points of the earlier concessions which had not been revoked.

Ships engaged in this trade had to belong entirely to the king's subjects, and be manned by sailors, two-thirds

^{*} Mitre, "Historia de Belgrano," I, p. 23.

of whom at least were Spaniards either by birth or naturalization. And all the principal ports, both in Spain and Spanish America, were open to this trade.

Although this law professes to establish "the free commerce of Spain with the Indies," the term here involved is not to be taken in the sense which attaches to it in current discussion. Ships might not sail without a license, and the wares which they carried were not all exempt from the payment of duties, although the duties, when imposed, were low, and varied according to the importance of the port of destination. Shipments to the smaller ports paid one and one-half per cent. on goods produced by Spaniards, and four per cent. on all foreign manufactures, besides the amounts these may have paid on their introduction into Spain. Goods shipped to the more important ports paid three per cent., if they were Spanish products, and seven per cent., if produced in other countries, unless entirely exempt from duty. For a period of ten years, Spanish manufactures of wool and cotton and certain other articles were admitted without payment. Notwithstanding these merely nominal duties, the new commercial code was essentially a code of freedom. It was clearly a violation of all that Spain had stood for for centuries; but it was for the advantage of both Spain and Spanish America. It called into action creative forces that had slept for centuries, and it gave indications of the beginning of a new economic life. But relief through freedom came too late. By centuries of unreasonable discrimination and unjust restriction, Spain had forfeited her parental rights; and emancipation was the logical and inevitable step forward.

PHYSICS DEDUCTIVE vs. PHYSICS INDUCTIVE.*

By FREDERICK SLATE.

Your "Science Round Table" offers me a valuable opportunity, which I should be glad to avail myself of, if my duties did not detain me at Berkeley almost inexorably. As it is, I cannot refrain from taking the chance to make a few general remarks on your topic, even though they must be written and not spoken, so far as I am concerned.

The suggestions coming from the form of your subject, "Physics Deductive vs. Physics Inductive," are numerous enough to promise a fruitful discussion. It would be best to follow the leadings of the remarks made, and to adapt myself to them. At the present time I can only forecast what may prove to be in any way useful, and say what lies in my mind.

We have all had experience which goes to show that the actual logic of elementary teaching in physics was not at first very firmly grasped. In fact, in so far as this logic has become apparent, it has been through the practical use of methods; and the logic has followed rather than preceded in time. In this case as in others similar to it, the most effective clarification for the thought has resulted from sympathetic occupation with the subject-matter.

The accumulated experience of the last ten years has done much to steady the judgment in these matters, which

*Read at the Science Round Table, Southern California Teachers' Association, March 31, 1898.

had become unsettled by the extremely rapid extension of the laboratory-method. We had a strong instinctive feeling that a good thing had been hit upon, without perhaps seeing in all desirable clearness what was to be its scope, its essential purpose, and its limitation. The method had been extended into earlier stages of education, and other branches of instruction. We were enthusiastic about it, but the aims of our enthusiasm were more vague than they need to be at the present date. However, the essentially conservative nature of teachers as a body avoided the worst risks; we have weathered the dangers of a period filled with groping effort; there are now landmarks to steer by.

It is not now believed that the laboratory-method will prove a panacea for all defects of secondary education. Still less would the claim now be maintained seriously that the phenomena of the laboratory can initiate a self-operative process, by which the pupils might instruct themselves, while the teacher's necessary activity could be reduced to a minimum. We have been brought to serener view, by cherishing all the influences that worked in the cause of moderation. With a continuance of conservative intention, we should equally endeavor to reduce the amplitude of any swing in the opposite direction, that would put the laboratory-method in the background, because when used alone it failed to compass all the ends of sound education.

Experience seems to unite in bringing home this lesson: "Every epoch of progress and reform is characterized by expansion and addition, rather than by contraction and substitution." The present, holding all the valuable accumulations of the past, adds to the common stock its own quota. The laboratory-method, extended and varied in application, is one small addition of our present to the inherited procedure in education. It is one of our problems to correlate its true functions with those of the elements already established as important.

With this thought in mind, the word "versus" in your title draws my attention.

Why should we think of Physics Deductive as opposed to, or exclusive of, Physics Inductive? It is mere commonplace to remark that Physics, like other well-developed sciences, is both deductive and inductive; the one process supplements and controls the other. Attack in the resolution of phenomena is made from both sides with equal justification.

So I would raise the question, as a profitable one for teachers of Physics to carry about with them, whether the cruder stages of both the deductive and the inductive process may not find their due place, even in the elementary teaching. If the answer be that they may (and I think this answer follows reasonable consideration), the vital question that remains is not one of weighing and rejection; but one of coördination, sequence, proportion. Let us grant that the latter question is in its nature more difficult and complicated. It is none the less the one to which we should turn our chief attention.

For the present purpose Physics Inductive may be taken to mean a procedure in which the experiment precedes the statement of the conclusion to be drawn from it; while that conclusion is, so far as possible under the conditions, suggested by the (stimulated) operation of the pupil's own mind. Physics Deductive on the other hand, involves a procedure in which the conclusion is formulated beforehand. It may be a logical corollary of previous experiment; or it may be imparted in the form of more or less dogmatic utterance by the teacher. In either case it is next sought to verify the conclusion by experiment shaped so as to be a test. I should be ready to defend the position in detail, that both of these methods of procedure are applicable; and that both will be found incorporated into the sanest and best practice in teaching Physics, even in secondary schools.

The pair of antithetical terms under discussion is often used loosely and with misunderstanding. Attention is therefore called to the fact that experiment forms an integral part of both; while the main difference lies in the succession and the mental attitude. We may have

experiment leading up to rule; or rule assumed, and its truth tested by bringing its consequences under the control of experiment. Both involve cautious suspension of judgment. Only in one case the suspension covers all judgment, in the other the verdict on a particular proposition.

Important deductions that are not a mere working out of details, usually start from an experimentally established premise, and are not accepted as valid until their result has been brought into comparison with phenomena. The terminals being thus experiment at both ends, we are not called upon to decide between two plans, one of which demands experimental corroboration, while the other substitutes for this an unsupported authoritative statement. It is a conceded point, not further open to argument, that all good instruction in Physics is inseparable from the study of typical phenomena, which may knit together and organize knowledge by the argument connected with them.

There is no reason visible to me, why both the acknowledged uses of experiment should not from the first be exemplified in the material chosen from the science of Physics as a means of development for young minds. If we limit ourselves to one use, the presentation of scientific method is to that extent curtailed, incomplete, and therefore misleading.

Let me follow up this suggestion by directing your attention to two other points where a self-imposed restriction (I mean one not imposed by the nature of the subject) appears unwise.

First, the word experiment above is to be interpreted in a broad sense. It is to be understood as including individual experiments by the pupils, experiments carried through before the class by the teacher or by selected pupils, observation of phenomena offered spontaneously by the workings of nature outside the laboratory scheme. The individual experiment is rightly insisted upon; and with all emphasis needed in order to establish that element in proper central position. But it is also true that an important factor has

been neglected, unless the mind has been led to recognize principles as underlying physical experiences of everyday life, and to "explain" this experience by reference to the principles of the laboratory and the text-book. The class-experiment carried through by the teacher occupies an intermediate position. Its character may be so adjusted to the conditions, that its lessons and evidence are just as conclusive for the whole class together, as for each member of the class if he performed it separately.

Let us guard still further against undue contraction of the horizon, by observing that the doctrine is untenable, which asserts that no account of phenomena is to be accepted as true, and sufficient, unless furnished by our own senses. Assimilation of information by judicious reading is to be encouraged as a habit, always with the caution of intelligent skepticism, but never with sweeping condemnation of such information as "second-hand stuff." Our lives are unavoidably determined by just such information, and it is the note of wisdom to train the faculty of discrimination as part of the business of preparation for life.

Secondly, we should not limit our activity as teachers by assuming that because the experiment is a necessary condition, it is therefore a sufficient one for good teaching. The field for the teacher remains at least as wide as before the general introduction of experimental methods. There is the heavy responsibility for selecting experimental evidence that is to the point and trustworthy, so that conclusions can be based upon it safely.* Moreover, keen and continuous activity alone can supervise and direct the processes of inference and assimilation. By these the material that experiment is made to furnish is to be shaped into organized form, and clearly stated, in order to be firmly held. The desultory interest of novelty in the expanding mind can never become an efficient substitute for well-proportioned

*It may be noted that misleading experiments are not yet completely banished from the published collections; the teacher needs to be wary about acceptance of the items, and may find scope for the fullest knowledge of his subject in passing judgment.

and thorough training. Wise guidance that stimulates and helps is the only guarantee that the real difficulties of a subject have been seen, met, and conquered.

With deliberate intention, such examples of the two processes as fall within the scope of the secondary school have been called crude.

The unskilled experimenter, working in the leading-strings of his teacher's directions, and during the hasty period of the school-day, can do but little towards really establishing the conclusions that he accepts as valid. The true "induction" of Physics is gained only by convergent testimony of very different weight and volume. But we prize the attitude of interested expectation, the instructive sense-perception of the phenomena, the beginnings of more adequate conception of experimental investigation, and the call to unremitting thoughtfulness in the work.

Again, the predicted result that is to test deductive reasoning is perhaps most often quantitative. The elementary experiment is at best only pseudo-quantitative. Numbers and measured quantities are unquestionably valuable at this stage; but less in the character of results than as promoting definiteness of knowledge. Tests of reasoning thus applied will in general lie open to be judged inadequate; yet even so their educational value remains. For the habit of mind can be thus rooted, which projects a thought forward in the line of its foreseen consequences, and controls or corrects the location of that line by an appeal to fact. In many instances, the scope of a principle can be best bounded by offering it for application to a group of special cases. Does it hold? Why? Does it fail? Why? And in this way the limitations of the statement become apparent to the mind making the inquiry.

I will rest satisfied with these outlined considerations, in order to observe the rule of brevity which makes discussion profitable; without presuming to think however, that they can do more than help in winnowing out even your closely limited topic.

SCHOLARSHIPS IN THE UNIVERSITY OF CALIFORNIA.

THE PHEBE HEARST SCHOLARSHIPS FOR WOMEN.

At a meeting of the Regents, held October 13, 1891, Regent Hallidie, Chairman of the Finance Committee, submitted the following:

"I have the honor to present to the Board the following communication from Mrs. Phebe A. Hearst:

"SEPTEMBER 28, 1891.

"To the Board of Regents of the University of California:

"*Gentlemen:* It is my intention to contribute annually to the funds of the University of California the sum of fifteen hundred (\$1,500) dollars, to be used for five \$300 scholarships for worthy young women.

"Two of these scholarships are to be given this year; and the remaining three at the beginning of the August term next year. I bind myself to pay this sum during my lifetime, and I have provided for a perpetual fund after my death.

"The qualifications entitling students to the scholarships shall be noble character and high aims, it being understood that without the assistance here given, a University course would, in each case, be impossible.

"I desire that a school officer, say any County Superintendent in this State, shall recommend to the Faculty of the University the applicants for scholarships, the award being made by a vote of the Faculty, but I do not wish any scholarships to be given as a prize for honors in entrance examinations.

"Mr. Irwin C. Stump, my business manager, will arrange the necessary formalities with the Secretary of your Board.

"Yours very sincerely,

"PHEBE A. HEARST."

"The Faculty of the University has already acted upon the suggestions of Mrs. Hearst, and appointed two young ladies to be recipients of Mrs. Hearst's bounty for the current year. It is necessary, therefore, that the gift of Mrs. Hearst be made immediately effective.

"I therefore recommend the adoption of the following resolutions:

"1. *Resolved by the Regents of the University of California*, That this Board recognizes and hereby expresses its grateful appreciation of the thoughtful generosity of Mrs. Hearst.

"2. *Resolved*, That this Board gladly accepts the offer of Mrs. Hearst to establish in the University of California five scholarships for worthy young women, upon the terms and conditions named in the communication.

"3. *Resolved*, That the said scholarships so established be named the Phebe Hearst Scholarships.

"4. *Resolved*, That the Secretary of this Board is instructed to confer with Mr. Irwin C. Stump and arrange the necessary formalities.

"5. *Resolved*, That the names of the students securing these scholarships be placed on the salary roll, and that checks be issued to them monthly as directed by Mrs. Hearst."

The above resolutions were unanimously adopted.

On April 12, 1892, Acting President Kellogg reported that Mrs. Phebe A. Hearst had increased the number of scholarships for young women from five to eight. It was voted that the Committee on Internal Administration transmit the thanks of the Regents to Mrs. Hearst by an appropriate letter. The letter sent was as follows:

"SAN FRANCISCO, April 14, 1892.

"MRS. PHEBE A. HEARST,

"*Dear Madam:* It gives me the greatest pleasure, in pursuance of the resolution of the Board of Regents, to return to you the thanks of the Board for your kind and munificent gift to the University in founding and endowing the three additional Phebe A. Hearst scholarships, for young women undergraduates. Such gifts are not alone a monument of the generosity and public spirit of the donors, but it must also be a source of the deepest satisfaction to them to reflect upon the number of young lives which will in the course of time be made brighter and easier by their liberality; and it seems peculiarly fit and

pleasing in this instance, that, as the University of California was one of the first to throw open its doors to women, a woman is the first to give to the University a benefaction for the encouragement of undergraduates.

"The State of California has labored nobly in the field of higher education in creating and endowing the State University, but it is only through the coöperation of private persons of generous impulses and lofty ideas that that great seat of learning can reach the full measure of its expansion and perform the full measure of its usefulness. The University belongs to the people, and as its achievements are marked and noted, it will become more and more an object of pride and affection to all, and its needs will be recognized by those who are willing and able to meet them, and I feel the confident hope that your example will kindle a generous emulation in a long line of others. I am, dear madam, your obedient servant,

"GEO. T. MARYE, JR.,

"Chairman Committee on Internal Administration."

THE STATE OF CALIFORNIA SCHOLARSHIPS.

At a meeting of the Regents, held March 9, 1897, the following resolutions were adopted:

WHEREAS, At the time of the passage by the present Legislature of the Act granting an additional income to the State University it was suggested by members of the Legislature that the sum of \$3,500 per annum should be set apart and used to aid poor and deserving students at the University; now be it

Resolved, That the said sum of \$3,500 per annum be and is hereby appropriated until the further order of this Board, out of the funds of the University, which sum is to be distributed equally among the Congressional Districts of this State, for the purpose of aiding, not to exceed twenty-eight (28) students per annum at the University; such students to be selected by the Faculty of the University, solely by reason of their mental ability, character, and needs.

The procedure and manner of the distribution of such scholarships to be, as far as may be, similar to that adopted in reference to the Phebe Hearst Scholarships.

The said scholarships shall always be known and designated as the State of California Scholarships.

THE LEVI STRAUSS SCHOLARSHIPS.

At a meeting of the Regents, held March 9, 1897, the following letter was presented:

"SAN FRANCISCO, March 6, 1897.

"Regent J. B. REINSTEIN,

"*Dear Sir:* I have noted in the newspapers that while the Legislature was considering the bill to increase the income of the University of California, a suggestion was made to set apart \$3500 per annum to aid worthy and poor students from each of the Congressional districts of the State to obtain an education at that University.

"I should be pleased to be permitted to duplicate the generosity of the State in the matter of said scholarships, and request you to kindly communicate the terms of this letter to the Honorable the Board of Regents of the University.

"The University of California has already risen to a plane that challenges the admiration of the entire country, and I deem it a privilege to aid those connected therewith.

"The proper officers are hereby authorized to draw on me each year, until further notice, for the sum of \$3500.

"I am, dear sir, yours very truly,

LEVI STRAUSS."

The following resolutions, accepting Mr. Strauss' offer, were unanimously adopted:

"WHEREAS, The sum of \$3500 has been set apart annually from the income furnished by the State to the University of California, to be distributed equally among the Congressional districts of this State, for the purpose of aiding not to exceed twenty-eight poor and deserving students at the University each year, and

"WHEREAS, Mr. Levi Strauss, of San Francisco, has duplicated the generosity of the State, for a like purpose,

"*Resolved*, That the thanks of the Board of Regents be extended to Mr. Strauss, not only for subserving the noble purpose of aiding the worthy poor to obtain an education, and thus filling a long felt want at the University, but also because the terms of his gift constitute a significant recognition that the purposes and beneficence of the University of California extend to every portion of the State alike.

"*Resolved*, further, That the disposition and procedure in connection with the said scholarships shall be similar in general to the procedure and disposition of the State of California Scholarships.

"*Resolved*, further, That the said scholarships shall be known and designated as the Levi Strauss Scholarships.

INSTRUCTIONS CONCERNING APPLICATIONS FOR THE SCHOLARSHIPS.

The Phebe Hearst, the State of California, and the Levi Strauss Scholarships will be awarded annually by the Academic Council, on the recommendation of the standing committee on scholarships. The

awards will be made—subject to the conditions imposed by the founders—solely on the ground of character, ability, and need. For the present, undergraduates in regular courses, and applicants for admission to such courses, will be preferred. It is understood that without this assistance a University course would in each case be impossible. A regulation of the faculties debars from scholarship privileges all students with deficiencies. The scholarships are tenable for one academic year, with the possibility of renewal, upon application.

Applications for the State of California Scholarships and for the Levi Strauss Scholarships will be received both from young men and from young women. The amount of each award will be determined upon consideration of the applications, subject, of course, to the conditions imposed by the founders, as above stated; but it is not expected that any award will be for less than \$125. It is not supposed or intended that a State of California Scholarship, or a Levi Strauss Scholarship, will, in every case, be sufficient for the beneficiary's entire support; but it is believed that few capable and self-reliant students, who have the assistance offered by these scholarships, will find it impossible to secure such additional means as will be necessary.

Applications for scholarships should be filed with the Recorder of the Faculties, for the consideration of the committee, on or before the first day of May of the academic year preceding that for which the scholarships are desired. A blank form of application is furnished by the Recorder, and will be mailed to any address, upon request. Awards will be announced not later, if possible, than June 1, and notice thereof will be sent by mail to each applicant. Payments are made at the office of the Secretary of the Board of Regents, in South Hall, in ten monthly installments, beginning September 10.

In the consideration of applications for scholarships, great weight will be attached by the committee, and by the Academic Council, to the recommendations of principals and teachers in secondary schools, and—in the case of students already in the University—to the recommendations of University instructors. So far as possible, such recommendations should furnish specific and succinct information concerning the essential points of the applicant's (1) character, (2) ability and promise as a scholar, (3) pecuniary circumstances and needs. The multiplication of testimonials of a general sort, by persons who are unable to speak from intimate acquaintance with these essentials, will be of little value. It is desired that undue personal solicitation of individual members of the committee be avoided; that communications be in writing; and be of such character as may properly be discussed at the meetings of the committee. Testimonials need not be transmitted through the applicant, but may, if so desired, be sent directly to the Recorder.

AWARDS OF UNDERGRADUATE SCHOLARSHIPS FOR 1898-1899.

In the Academic Council, May 16, 1898, the Committee on Scholarships made the following report, which was adopted:

To the Academic Council:—Your Committee on Scholarships begs leave to make the following report and recommendations:

Two hundred and twenty-four applications were before the Committee for consideration. Fifty-four of these applied for Phebe Hearst Scholarships. Failing that, most of the applicants were candidates for State of California and Levi Strauss Scholarships. Of the incumbents of the eight permanent Phebe Hearst Scholarships, four were candidates for reappointment, the other four being members of the graduating class. These candidates seemed in every way worthy of reappointment, and are so recommended. Of the fifty-six incumbents of the State of California and Levi Strauss Scholarships, forty-six applied for reappointment, nine graduating, and one voluntarily withdrawing. The record of these forty-six was carefully examined by the Committee, and five were found not to have done satisfactory work. The remaining forty-one were considered by the Committee entitled to the continuance of the scholarships in their favor, and are so recommended. Of these, two will complete their course next December, leaving their scholarships vacant for one-half of the year. The vacancies, by Congressional Districts, to be filled, are then as follows:

1st Congressional District.....	0
2nd Congressional District.....	4
3rd Congressional District.....	2½
4th and 5th Congressional Districts	4½
6th Congressional District.....	1
7th Congressional District.....	4
Total.....	15 and 2 half-year.

The junction of the Fourth and Fifth Congressional Districts was sanctioned by the Regents last year.

Taking out the nine recommended for appointment to Phebe Hearst Scholarships, the distribution of applicants for State of California and Levi Strauss Scholarships, by Congressional Districts, was as follows:

1st Congressional District.....	20
2nd Congressional District.....	28
3rd Congressional District.....	58
4th Congressional District.....	12
5th Congressional District.....	19
6th Congressional District.....	39
7th Congressional District.....	39
Total.....	215

The difficulty of the Committee's task is apparent. We did not spare time, devoting several days to the examination of credentials. We gave to the decision our best judgment, striving to base the awards on merit alone. It seems needless to say that we have regarded this year, as we did last year, the directions of the Regents as to distribution among the Congressional Districts. This appears from the subjoined list of recommendations, as it did from the recommendations submitted last year. We make the statement here because there is evidence of an impression, outside the Academic Council, that we did not so regard directions. And we may say further that we endeavored last year, as again this year, to distribute the scholarships of each Congressional District among the several counties of such Congressional District, so far as might equitably be done. In doing this, we have been obliged to disregard applications of most conspicuous merit and most urgent need. No one, outside the committee, can comprehend the worth, the struggles, the heroism, the pathos represented in many of the applications perforce denied.

A word should perhaps be added with reference to the 3d Congressional District. Of the 58 applicants in this district, 41 were from Alameda County. This was a smaller proportion than last year. Only two full-year vacancies and one half-year vacancy occur in this district. We cannot, therefore, show much change from last year's award.

With this explanation, made in writing instead of orally as usual, in order that it may be transmitted to the Regents of the University, we make the following recommendations:

In the matter of the Phebe Hearst Scholarships, we recommend that the Academic Council appoint, in accordance with the directions of Mrs. Hearst's letter of September 28, 1891, the following to be Phebe Hearst Scholars for 1898-99 or part thereof as indicated:—(1) To the Temporary Scholarships. Reappointed: Thirmuthis Amy Brookman, Senior, Letters, Los Angeles. (2) To the Permanent Scholarships. Reappointed: Lily Hohfeld, Senior, Letters, San Francisco; Eva M. Stone, Senior, Social Sciences, Berkeley; Grace Esther Biddle, Senior, Social Sciences, San Francisco (till December 31, 1898); Gertrude Dorothy La Motte, Senior, Social Sciences, Ukiah. Newly Appointed: Elise Wartenweiler, Senior, Social Sciences, Benicia; Belle Bowden, Senior, Social Sciences, San Luis Obispo; Alice Marion Cumming, Junior, Social Sciences, Santa Cruz; Mary Grace Wiltshire, Junior, Social Sciences, San Bernardino; Anna Ruth Wilder, Junior, Social Sciences, Oakland (from January 1, 1899).

To be State of California Scholars for 1898-99 or part thereof as indicated:—First Congressional District. Reappointed: Burt E. Hooper, Senior, Mechanics, Red Bluff; Elmer Blainey Harris, Sophomore,

Mechanics, Cotate; Henry John Boke, Senior, Social Sciences, Napa; Mittie Ursula Myers, Senior, Social Sciences, Sierra Valley. Second Congressional District. Reappointed: Minnie B. Bannon, Sophomore, Letters, Sacramento; Lillian Gertrude Chace, Junior, Social Sciences, Nevada City; Richard Walton Tully, Sophomore, Social Sciences, Stockton. Newly Appointed: John Henry Collier, Senior, Mining, Angels. Third Congressional District. Reappointed: Agnes Frisius, Sophomore, Social Sciences, Alameda; Reno Hartley Hutchinson, Senior, Letters, Oakland; Milton Newmark, Senior, Social Sciences, Berkeley. Newly Appointed: Claude I. Rhodes, Freshman, Mining, Woodland. Fourth and Fifth Congressional Districts (Together). Reappointed: Clara Marion Stark, Senior, Letters, Fourth District, San Francisco (till December 31, 1898); Alice Bowman Wright, Sophomore, Letters, Fourth District, San Francisco; Adrienne Cerf, Sophomore, Social Sciences, Fifth District, San Francisco; Ralph Chandler Daniels, Senior, Chemistry, Fifth District, San Francisco; Charles James Houston, Senior, Social Sciences, Fifth District, San Francisco; Guy Van Schaick, Senior, Social Sciences, Fifth District, Gilroy; Winnie C. Milledge, Sophomore, Social Sciences, Fifth District, San Francisco. Newly Appointed: Iva A. Gelatt, Freshman, Social Sciences, Fifth District, San José; Gertrude Sutcliffe, Sophomore, Social Sciences, Fourth District, San Francisco (from January 1, 1899). Sixth Congressional District. Reappointed: Frank G. Goodenow, Sophomore, Letters, Los Angeles; Paul Ainsley Sinsheimer, Sophomore, Social Sciences, San Luis Obispo; Kate Courtenay Johnston, Sophomore, Los Angeles. Newly appointed: Robert P. Stephenson, Sophomore, Mechanics, Nordhoff. Seventh Congressional District. Reappointed: Flora Genevieve Savage, Sophomore, Natural Sciences, Tulare; George G. Hunter, Sophomore, Social Sciences, Bakersfield. Newly appointed: Walter S. Sessions, Sophomore, Mechanics, Redlands; John M. Chain, Sophomore, Natural Sciences, San Diego.

To be Levi Strauss Scholars for 1888-99, or part thereof as indicated: First Congressional District. Reappointed: Jessie Bohall, Sophomore, Social Sciences, Arcata; Edith Edna Gaddis, Sophomore, Social Sciences, Santa Rosa; Edith Mabel Kendall, Sophomore, Chemistry, Manchester; Inga Ernestine Ourblin, Sophomore, Social Sciences, San Rafael. Second Congressional District. Reappointed: Benjamin Allen Baird, Junior, Civil Engineering, Lodi. Newly appointed: Henry A. Geisendorfer, Senior, Mining, Weimar; Amy G. Van Deerlin, Sophomore, Social Sciences, Grass Valley; Emma Marion Long, Freshman, Letters, Sacramento. Third Congressional District. Reappointed: Mary Lee Burdick, Junior, Letters, Centreville; Agnes R. Jewett, Senior, Social Sciences, Oakland (till December 31, 1898); Margaret Agnes Fortier, Sophomore, Social Sciences, East Oakland.

Newly appointed: Noel H. Garrison, Junior, Letters, Colusa; Fred F. Goodsell, Freshman, Social Sciences, Byron (from January 1, 1899). Fourth and Fifth Congressional Districts (Together). Reappointed: Carl Sophus Hansen, Senior, Social Sciences, Fourth District, San Francisco; Lorena Alice Sturges, Senior, Social Sciences, Fourth District, San Francisco; Walter Wadsworth Bradley, Sophomore, Mining, Fifth District, San José; Rachel Kurlandzik, Sophomore, Natural Sciences, Fifth District, San Francisco; Alfred Charles Skaife, Sophomore, Letters, Fifth District, San Francisco; Frank Walter Kerns, Sophomore, Mechanics, Fifth District, San José. Newly appointed: Annie H. Allen, Sophomore, Letters, Fifth District, San Francisco; Monroe E. Deutsch, Freshman, Letters, Fourth District, San Francisco. Sixth Congressional District. Reappointed: Theobald Percy Bayer, Junior, Social Sciences, Salinas; Willard Giles Parsons, Junior, Letters, Los Angeles; Carl Melvin Warner, Senior, Social Sciences, Covina; Pearl Marshall, Senior, Letters, Santa Maria. Seventh Congressional District. Reappointed: Wallace Webster Merriam, Junior, Mechanics, Twin Oaks; Clyde Merrill Westcott, Junior, Chemistry, Tustin. Newly appointed: Louis Aree, Freshman, Civil Engineering, Oakdale; Henry N. Bagley, Freshman, Mining, Merced.

WM. CAREY JONES,

Chairman Committee on Scholarships.

BUILDINGS AND EQUIPMENT.

EAST HALL.

East Hall is the last of the group of four buildings erected during the past year to meet the most immediate and pressing necessities of instruction in Berkeley. Unlike the other three, each of which houses a single department, this one is intended to provide quarters for three departments entire, as well as laboratories and class rooms for elementary instruction on a variety of lines. The building stands between the Library and the Chemical Laboratory, fronting south, and enclosing with its wings three sides of a quadrilateral. It is a wooden structure, two stories in height, with a basement, most of which is above ground. The main entrance, the hall and stairway, with the furnace and fuel rooms behind, occupy the central portion of the

ground floor. Adjoining these, in the east wing, are the waiting-rooms, dressing-rooms, and study for the young women. Adjoining them on the west are the laboratories and class rooms for elementary Physics with offices and studies for instructors.

Above the basement story the central portion of the building contains, on the first floor, two large class rooms for general use, and, on the second floor, class rooms and studies for the Department of Instrumental Drawing and Engineering Design. The west wing is devoted to Zoölogy. Here, on the first floor are the large laboratory for elementary work, the office and laboratory of the professor in charge, a small laboratory for assistants, together with a specimen room, a sink room, and a shop. On the second floor are a combined class and laboratory room for Histology and Embryology, a research laboratory, rooms for reagents, ovens, incubators, and the like, and an instructor's study. The east wing is assigned to Industrial and Decorative Art. There are here four rooms—two on each floor—for the various classes in drawing, design, modeling, and carving, with offices and studios for the professor and his assistants, and a room for casts.

OFFICIAL ACTION.

In the Academic Council, April 8, 1898, the Committee on Commencement Exercises made the following report, which was ordered printed for further consideration:

To the Academic Council:—On behalf of the Committee on Commencement Exercises, I request leave to present the following partial report. The Council will please take notice that it is only partial, not final. It is made at the request of the President, in order to provide for present action in the matter of speakers at Commencement, and, by reason of this pressure for time, does not rest upon a formal meeting of the committee, though I believe it represents with entire correctness the committee's views as reached at meetings held in 1897.

Since then, the committee have held several meetings for conference with a committee representing the Associated Alumni of the University and its various Affiliated Colleges. The present report is based upon the results of these conferences. It may be presented under the following heads:

I.—Limits of the Commencement Period. The committee in agreement with the mentioned Conference Committee, are of opinion that the Commencement period should extend from the morning of Thursday preceding Commencement Day to the evening of that day, namely, Wednesday evening. That is to say, for the present year, from the morning of Thursday, May 12th, to the evening of Wednesday, May 18th, inclusive.

II.—Division of the Period between Undergraduate Exercises and University Exercises. The committee are of opinion that all Undergraduate exercises, such as Class Day, the Senior Ball, exhibitions by Students' Clubs, meetings of Fraternities, etc., and the Baccalaureate Sermon or Address, should be confined to the first four days of the Commencement period, namely, to Thursday, Friday, Saturday, and Sunday; and that the last three days, namely, Monday, Tuesday, and Wednesday, should be reserved to the University authorities, to the Alumni, and to such societies connected with the University as represent the higher academic pursuits in some public way. In detail the committee would recommend:

(1) That hereafter Class Day be the opening celebration of the period, to occur on the initial Thursday. (The present year, however, Class Day to be on Saturday, May 14th, as already announced.)

(2) That the Senior Ball be always on this Thursday evening, as announced this year.

(3) That Club exhibitions, etc., etc., be on Friday or Saturday, daytime or evening, as those concerned may decide.

(4) That, accordingly, the annual Reception by the President be removed from Friday evening to Wednesday evening of Commencement Day. (This change, however, not to take effect the present year, on account of the Alumni Banquet in San Francisco, already announced for Wednesday evening, May 18th.)

(5) That the Baccalaureate Sermon or Address be on Sunday afternoon at three o'clock, in such place as the officers of the Senior Class, with the approval of the President of the University, may select.

As to the detail of the days reserved to the University authorities, Alumni, etc., the committee would recommend:

(1) That the Commencement Exercises be on Wednesday, in the morning, closing sharp at 12:15 p.m., or earlier, and beginning not

earlier than 10:15 a.m., and that the time of all participants in these exercises be strictly limited, and the limits enforced, so that the exercises shall actually end at the mentioned time.

(2) That the Alumni Luncheon and Reunion, which has been unanimously provided for and arranged in the conference meetings, as a permanent feature of all Commencement occasions hereafter, be at 12:30 p.m. on Commencement Day.

(3) That the evening of Wednesday, Commencement Day, be given hereafter to the President's farewell reception to the graduating class, during such hours as the President may designate. (This not to be operative the present year.)

(4) That the annual Alumni Banquet be held the present year, as announced, on Wednesday evening, May 18th; but that, hereafter, it be on the evening of Tuesday preceding Commencement Day, provided the Alumni Association approves the measure, and makes, accordingly, the required change in its Constitution or By-Laws.

(5) That public meetings or addresses of societies mentioned above be on Monday or Tuesday, in the daytime or evening, as their managers may prefer; provided that no interference be had with the Alumni Banquet, and with the exception following.

(6) That, in particular, hereafter the evening of Monday be assigned to the public address before the Philosophical Union. (For the present year, however, this meeting and address to be, as already announced, on the evening of Tuesday, May 17th.)

III.—The Commencement Programme. The chief question here is whether there shall be parts by representatives chosen from the students. The committee has to report that the conferences showed the representatives of the Associated Alumni to be indifferent upon this question; or, rather, that they will cordially accept whatever decision the University authorities, in consultation with the President, may deem most expedient. The committee may add, however, that correspondence with the presidents of the leading eastern universities shows that in every one of them, excepting only Harvard, student participation in Commencement exercises has been practically abandoned. The exercises have generally taken on the form of an imposing ceremonial or "function," one feature of which is a procession of university officials, alumni, and undergraduates, rendered as dignified and striking as possible by academic robes, hoods, scholastic caps, etc. The speaking, except at the University of Chicago, is restricted to brief statements in "presentation" of candidates for the various degrees, to the formulas of conferring, and to a short summary of the academic year by the president. From Harvard, however,

the president writes that there seems no disposition there to discontinue the speaking by students, who are represented to the number of six or eight.

As to the question of an address by some person of eminence from a distance, the University of Chicago is the only leading institution that observes this measure at conferring of degrees. At other institutions, addresses of this nature are held on other days than Commencement Day, or at an hour distinct from the time for Commencement exercises, and this hour is devoted exclusively to the address.

Your committee have, at present, no definite recommendation to make in this matter, either as to student speakers or a speaker invited from a distance. They may say, however, that personally they doubt if our California public, whether connected directly with the University or not, is yet quite ripe for the change involved in omitting student speakers. And they may add, that, if student speakers are retained, it is the clearly expressed wish of the conference meetings above referred to, that the Affiliated Colleges should be represented. In this reference, therefore, your committee would recommend that in case student speakers are retained, and so long as they are retained, the number be limited to four,—two from the colleges at Berkeley, one of whom shall be a woman, and one, each, from the Law College and the Medical Department, including the various colleges kindred with it.

For the present year, as the Regents have already invited a speaker from a distance, the question of student speakers becomes more difficult, and the committee prefer that its settlement be determined by the Council, advising with the President.

As to a procession and the substitution of a ceremonial for the literary exercises, your committee can only say that the present conditions are incompatible with this. The Commencement exercises must this year be held in a tent, temporarily erected for the purpose. Imposing ceremony is thus out of the question. But the committee cannot close even this partial report without calling the attention of the Council, and through it the attention of all the University authorities, especially the Regents, to the pressing, the insistent, need of some immediate provision of a tolerably suitable place for holding the exercises on Commencement Day. They hope that an urgent representation of this need may be made to the Regents without delay, and that by the time the close of another academic year comes round, a sufficient though inexpensive building for this purpose—built of wood, of course,—may be standing, ready for use, upon the grounds. Respectfully submitted, for the Committee,

G. H. HOWISON, Chairman.

In the Academic Council, May 16, 1898, after consideration of the records, it was voted that:

Rowe Montrose Hathaway be declared the most distinguished scholar of the graduating class, and be recommended to the Regents of the University as worthy to receive the University medal for 1898, in accordance with the provisions of the donors.

In the Graduate Council, May 16, 1898, the Committee on Scholarships reported that it had been requested by the Harvard Club to nominate a member of the Graduating Class for the Harvard Club Scholarship for 1898-99. The Committee had nominated Albert Henry Allen, prospective A.B., and the Club had awarded the scholarship to Mr. Allen. On motion, the action of the Committee was concurred in.

CURRENT NOTES.

COMMENCEMENT WEEK.

The exercises of Commencement Week, 1898, opened with a reception and display of library treasures, in honor of the graduating class, in the Bacon Art and Library Building, on Wednesday evening, May 11. On improvised frameworks a large number of etchings, engravings, and photographs were displayed, while on the tables in the main library room and in the reading rooms some of the rarer and more sumptuous of the books possessed by the Library were laid open for inspection.

On Thursday evening, the Commencement Ball was held in the Harmon Gymnasium.

On Friday evening occurred the President's reception to the Faculties and the graduating class; and on the same evening the California Library Association held a meeting in the Bacon Art and Library Building. At this latter, Professor Moses gave reminiscences of book-hunting in Spain, and exhibited several rare volumes that he had procured there; Professor Clapp read a paper on the Libraries

of the Ancients; and Professor Bacon, speaking on the assigned subject "Before Libraries—What?" showed that from the beginning of book-making libraries had existed in some form or other, but that previous to the present century scholars had great difficulty in getting access to the books that they needed.

Saturday, May 14, was Class Day. In the morning the graduating class made its farewell pilgrimage. At Founders' Rock, President Kellogg told of the dedication of the site to higher education on April 16, 1860; of the struggle of the noble band of trustees of the College of California to further the interests of sound education in early days; and of their generous gift of all their assets, including the site, to the newly organized University of California. In concluding, he said, "As the years follow each other in swift succession let each year see a renewed dedication of this peerless site to the higher education. Let every successive band of graduates devote themselves to the noble ends for which both the College of California and the University of California were established—the enlightenment and the improvement of the world in which we live."

The different buildings were then visited and farewell addresses made by the following speakers: Mechanics', H. B. Budd; Civil Engineering, Percy M. Newhall; Chemistry, Benjamin Bakewell; Library, A. H. Allen; South Hall, Secretary E. W. Davis; and North Hall, Joseph Haber, Jr.

The "Senior Fence" was then turned over to the care of the Class of '99 by J. W. Leggett, the President of the graduating class, and accepted by Reno Hutchinson, the President of the new Senior Class.

The procession then moved to the large oak on the lower campus that had been selected by the class for dedication to Professors John and Joseph LeConte. Here Miss Marion C. Whipple made an address and unveiled the dedicatory tablet, and Professor LeConte briefly responded.

An unseasonable rain caused the postponement of the open-air pageant and class dispensation that had been

planned for the afternoon and of the concert by the University Musical Association that was to have been held in the evening.

On Sunday afternoon, the Baccalaureate sermon was preached at the First Presbyterian Church by the clergyman selected by the class, Rev. H. C. Minton, D.D., on "The Claims of Religion upon Educational Thought."

On Monday afternoon the graduating class enjoyed the hospitality of Mrs. Phebe A. Hearst, at a garden party at her country residence, Hacienda del Pozo de Verona.

The postponed class day exercises were held on Tuesday afternoon; but, as the weather was inclement, they were given in the tent that had been erected on the campus for the commencement exercises instead of in the amphitheatre back of the Mining Building, as originally intended. The exercises were of the nature of a birthday celebration, "in honor of the royal child Ki Yippi Ki Yi" (the "class yell"), all the members of the class appearing in Chinese festal costumes.

In the evening, the postponed concert by the University Musical Association was given in Shattuck Hall. In the lecture room of the Philosophy Building, the Philosophical Union held its annual meeting, and after the business had been transacted, listened to an address by the President, Professor Howison, on the Philosophy of Professor James, as seen in his latest book, "The Will to Believe."

The Commencement Exercises were held on Wednesday, May 18, in a spacious tent that had been erected on the campus. The programme is given elsewhere. At half-past twelve the Alumni Luncheon and Reunion was held in the Harmon Gymnasium; and in the evening the Alumni Banquet at the California Hotel, San Francisco, ended one of the most notable Commencement seasons in the history of the University.

THE COMMENCEMENT.

The Twenty-ninth Commencement of the University of California was held in a large tent erected for the purpose on the lower campus. The occasion was notable not only because of the large number receiving their degrees from the departments at Berkeley, but because of the presence of the graduating classes from the Hastings College of the Law, the Medical College, the Dental College, and the College of Veterinary Science.

After prayer by the Rev. T. C. Williams of the First Unitarian Church of Oakland, the President read a statement as to the progress of the University during the past year.* This was followed by an address on The Modern University and its Relation to Practical Life by Professor Edmund J. James, of the University of Chicago.†

The following degrees were then conferred:

The Degree of Doctor of Laws upon:—John Martin Schaeberle, M.S., C.E.

The Degree of Doctor of Philosophy upon:—Willis Linn Jepson, Ph.B. (Thesis: Flora of Western Middle California).

The Degree of Master of Arts upon:—Francis Henry Bartlett, A.B. (Thesis: Phonetic History of the French Pronouns), Eugene Huntington Benson, A. B., Pomona (Thesis: The Ethology of Humor), Samuel Alexander Chambers, A. B. (Thesis: The Pessimism of De Vigny and of Leopardi), John Joseph Gallagher, Ph.D., Rome (Thesis: Education and Juvenile Crime), Lillie Unna Kalman, A.B. (Thesis: Heine's own Standard applied to Heine himself), Stella M. Linseott, A.B., Nevada (Thesis: The Lucretian Hexameter), ‡Minnie Beatrice Reynolds, A.B. (Thesis: The Vague Supposition in Plato), Mildred Maude Wheeler, A.B., Nevada (Thesis: An Analysis of the Versification of Lucretius), Emma Younglove, A.B., Oberlin (Thesis: The Effect of the Enclitic *que* on Accent in Lucretius).

The Degree of Master of Letters upon:—Julia Florence Lee, B.L., Mills College (Thesis: A Study of some of the Lines along which English Comedy has been Influenced by the French), Georgia Ella Reed, B.L. (Thesis: The Investigation of the Principles and the

* See page 193.

† See page 201.

‡ Conferred, December 21, 1897.

Methods of the History of Literature, based upon a critical study of Taine's History of English Literature, and other historians).

The Degree of Master of Science upon:—Frederic Theodore Bioletti, B.S. (Thesis: Notes on the Genus *Nemophila*), George Elden Colby, Ph.B. (Thesis: On the Quantities of Nitrogenous Matters Contained in California Musts and Wines), Samuel Percy Jones, Ph.B., B.L., Georgia (Thesis: On Evolution), Charles Palmer Nott, Ph.B., Brown (Thesis: The Classification and Distribution of the Species of *Nitophyllum* Grev. occurring on the Coast of California), Earnest Almond Owen, B.S., Pomona (Thesis: Methods for Determining Available Phosphoric Acid and Potash in Soils), Lucius Moody Tolman, B.S., Pomona (Thesis: Chemical Examination of Soil Sediments with reference to their respective Plant Food Values), Harry Beal Torrey, B.S. (Thesis: Special Studies among the Coelenterata), Clara Louise Williams, B.S. (Thesis: The Origin of the Karyokinetic Spindle in *Passiflora cerula*), Cora Lenore Williams, Ph.B. (Thesis: Syllabus of Surface Geometry (Corresponding to Euclid, Books I-VI). Prepared as an Introduction to Absolute Geometry).

The Degree of Bachelor of Arts upon:—Albert Henry Allen, Centennia Barto, Helen Chaffee Bovard, Leila Glenn Bovard, Louis Frederick Brown, Charles Marcellus Bufford, Selah Chamberlain, Allen Lawrence Chickering, Susan Gardner Clark, Wigginton Ellis Creed, Veronica Anita Duffey, Elizabeth Caroline Fink, Laura Frank, Helen Grace French, William Hall, Ruth Henry, A.B., Edward Hohfeld, Jr., James Winfield Howson, Katharine Mary Jeffreys, Winifred Margaret Jeffreys, Frederic Perley Johnson, A.B., Joseph William Leggett, Gertrude Elizabeth McVenn, *George Ulysses Moyse, Irving Needham, Charles Kimball Osborne, Mabel Cluness Palmer, Mary Lydia Patch, Nathaniel Sanders, Lawrence Talcott Wagner, Lucretia Estelle Watson.

The Degree of Bachelor of Letters upon:—Archibald Barron Anderson, Ruth Atterbury, Adolph Baer, Emma Geraldine Barron, Augusta Hunt Blanchard, A.B., Lulu Jule Blumberg, Walter Percy Bordwell, Jennie Margaret Cahill, George Clark, Mae Marian Cohen, Volney Howard Craig, *Cecilia Brownlee Cronise, Harriet Mildred Curtis, Edith Putnam Dart, Maurice Louis Euphrat, Lulu Belle Finley, Hayes Harvey Gable, Etha Rebecca Garlick, Silas Wright Geis, Florence Elizabeth Green, Ella Aileen Guppy, Helen Harris, A.B., Chat Louise Hathaway, Aurelia Isabel Henry, William Burnham Hoag, *Cecil Knight Jones, Edna Jones, Margaret Zilpha Kelley, *Mary Grace Maxwell, Mary Crooke McCleave, Marie Josephine McKinley, Paul Lucien Miller, John Cassell Newlands, Lilian Maria Parker, Hartley Fiske Peart, Gilbert James Rector, Ruth Lawrence Rising,

* Conferred, December 21, 1897.

Sara Maude Robinson, William Carroll Russell, Charlotte Sanderson, George Harrison Slawson, Anita May Sleeper, Edwin William Stadtmüller, Carrie Stern, Lucy Field Swett, Edna Waymire, Ernest Pratt Wellman, A.B., LL.B., Marion Crins Whipple, Ednah Harmon Wickson, Una Yone Yanagisawa, John Zeile.

The Degree of Bachelor of Philosophy upon:—*Emilie Aniser, *John Finley Baldwin, Herbert James Bias, Fred Hathaway Bixby, Everett John Brown, *May Colman, George Lyon Cross, Arthur Joseph Dannenbaum, Bertha Viola Deaderick, Walter Murray Dickie, Maude Durand, Fred Ross Fairchild, Linn Markley Farish, John Anderson Gammill, Harriet Eliza Gibbs, Helen Mary Grace, Alexander Edward Graham, Bessie Mabel Griswold, Joseph Haber, Jr., Lena Rosina Haehnlen, Harvey Edgar Harris, Elizabeth Hassard, Lou Hellmuth, Grace Lewis Henley, †Lewis Allen Hilborn, Ira Hochheimer, James Hopper, Lucas Edward Kilkenny, Frank Brown King, Virginia Nason Klenck, George Darby Leslie, Florence Elizabeth Mason, Floyd Lafayette McKenney, John Lionel McVey, Else Mehlmann, John Sroufe Merrill, Carmen Moore, Jacqueline Montague Newton, Emma Laura Noonan, John William Procter, Flora May Robb, Beatrice Winifred Robinson, Edna Robinson, Josephine Roller, *Emily Olga Rosenstirn, Minnie Elizabeth Ross, B.S., Spiro Sargentich, Gertrude May Scott, James John Schmit, Clarence Arthur Smith, Julia Smith, *Mae Smith, *Walter Augustus Starr, Emily Merriam Stetson, Adolph David Sweet, Frank Peard Thomas, Thomas Casey Van Ness, Jr., Harry Lotis Waste, Mary Harriet Wellman, A.B., M.A., *Annie Whitley, Francis Alfred Wilder, *Louise S. Wilson, *Samuel Austin Wood, Jr., *Ben F. Wright, *Kate Grace Wythe.

The Degree of Bachelor of Science upon:—Curt Albert Arents, William Wallace Arkley, Evelyn Dorothea Armer, Adolph Baer, Dudley Baird, Benjamin Bakewell, Estelle Jane Barden, Henry Berkeley Budd, Camillus Bush, Jacob Centennial Clausen, Emma Fielding Daniel, Clarence Merritt Dickerson, Alexander Jack Dickie, Clarence Willard Doane, Thomas Freeman Eastman, John Nevison Force, Robert Arnold Foster, Frank Edward Frey, Howard Joseph Friedlander, Laura May Funk, Anson Northrup George, Ralph Erwin Gibbs, *Nealy Harris, Robert Kelsey Haskell, Rowe Montrose Hathaway, Riuhei Hayakawa, Carl Edward Heise, Tamekichi Hiraiwa, *Arthur Douglass Hirschfelder, William McMurray Huff, *Henri Theodore Antoine Hus, Solomon Hyman, Wildrie Freeman Hynes, Joseph Russell Jarvis, Anna Maria Landström, *Anstruther Abercrombie Lawson, Howard Carpenter Marmon, Mathias Joseph Mayer, James Edward McGuire, Lewis Durant Mead, Harold Wilder Meads, John Walter Millar, Loye Holmes Miller, Avery Morgan, Walter

* Conferred December 21, 1897. † Conferred September 14, 1897.

Spangenberg Morley, Marie Irene Muller, Charles Harper Munro, Percy Melrose Newhall, Albert Clyde Olney, Harold King Palmer, Homer Charles Parker, Herbert Whatmough Pudan, Alice Robertson, John Foster Spencer, B.S., Roderic Sanderson Stewart, Philip Rawthmall Thayer, Clifford Holton Towle, Jessie June Trowbridge, George Julius Wagner, Sydney Vattell West, Clarence Raymond Weymouth, Cyril Wigmore, *Clara Louise Williams, Charles Jasper Wilson.

The Degree of Bachelor of Laws upon:—David Stern Bachman, B.S., Thomas Vail Bakewell, A.B., Frank Henry Benson, Peter Augustine Breen, A.B., Joseph Perkins Chamberlain, Harry Ernest Church, James William Clarke, Charles Centennial Cohn, William Edward Colby, Eustace Cullinan, A.B., John Ralph Daniels, Samuel Daniel Davis, Walter Joseph DeMartini, A.B., Sidney Myer Ehrman, B.L., James Byrnes Feehan, Jonathan Edward Gardner, Frederick William Henderson, B.L., Thomas Wand Hickey, B.S., William Henry Lamand Hynes, William Wallace Kaye, A.B., Grant Alexander Laughlin, B.L., Maxwell McNutt, Ph.B., Alfred Harold Marchant, Hugo David Newhouse, Edward Lee Payne, Elinor Dickinson Pratt, Arthur Howard Redington, B.L., Edward Paul Tobin, B.S., Percy Edgar Towne, Robert Haviland Turner, Ph.B., Rachel Vrooman, B.L., John Madison Walthall, B.S., Jessie Eleanor Watson, Ph.B., Jesse Meigs Whited, Irvin Judith Wiel, Alfred Herrmann Yordi.

The Degree of Doctor of Medicine upon:—Henry Abraham, Cosam Julian Bartlett, William Lisle Bell, Peder Sather Bruguere, Edwin Callaway, Thomas Joseph Crowley, George Woodward Duffey, Henry Masten Fine, Edward David Giroux, Howard Stephen Hill, Malvina Irma Judell, Alexander Stanislaus Keenan, Grace Stryker Linforth, Victor Francis Lucchetti, Joseph Senevy Menefee, Friedrich Charles Muller, Thomas Bryan Roche, Frank Joseph Tillman, Oscar Tobriner, Niel Charles Trew.

The Degree of Doctor of Dental Surgery upon:—Perley Bosworth Aiken, Henry Graham Allen, John Hugh Atkins, Mabel Lucille Beers, Jean Cline, John Hill Cooper, Homer Theodore Craig, Charles Hall Du Bois, Andrew Lewis Edwards, Weston Burgess Estes, Hartley Williams Gottenberg, Norman Sherwood Halsey, William Daniel Henderson, Ira Loomis Hinckley, John Percy Hines, Andrew Jackson Hiniker, Perley Centennial Jones, Minnie Evangeline Jordon, Charles Fisher Lemmon, William Raymond Linseott, Flora Mac MacDonald, Louis Paul Mariotte, Charles Luttrell McPike, Herbert Oscar Francis Menton, Charles Leonard Morey, Jerome Bonaparte Painter, Helen Agnes Parker, Frederick Bright Pearce, Armstrong Cooper Pratt, Alfred Currie Rulofson, Jr., George E. Schillig, Franklin Trewick Seott, Frank Converse Sellwood, Ernest Kirkpatrick Sisson, Thomas

* Conferred December 21, 1897.

Martin Smith, Walter Joseph Smyth, Joseph Mehlert Stalder, George Grant Stanford, Charles Joy Stephens, George Henry Stewart, William Alfred Walden, Frank Dilts Watkins, Caleb Russell Wileoxon, Jean Irene Worthington, George Henry Wymore.

The Degree of Doctor of Veterinary Science upon:—Louis C. Hoffmann, Joseph Oles Jacobs, Joseph S. Keane, George H. Locke.

Governor Budd then addressed those about to receive Military Commissions:—

"I desire to say to the young men who now receive their commissions from the State of California as a portion of the military arm of the State, that twenty-five years ago, on these very grounds, I was commissioned as First Lieutenant, as I commission you here to-day. It has been my privilege as Governor of this State, to turn over to the President of the United States two regiments, two battalions, and four batteries of artillery. When the next demand for troops comes, I intend to call upon the graduates of the University of California as fitted by reason of their training to serve and to repay by their patriotism the State of California, to give their lives for Uncle Sam and to bring glory to him."

The following were then commissioned: To be Colonel, Melville Dozier, Jr.; to be Lieutenant-Colonel, Loye Holmes Miller; to be Major, Volney Howard Craig and Philip Rawthmall Thayer; to be Captain, Anson Northrup George, Hartley Fiske Peart, Edwin William Stadtmuller, Lawrence Talcott Wagner, Alfred Lewis Giacomini, John Edward Rainey, Cyril Wigmore, Sydney Vattel West, John Walter Millar, Archibald Barron Anderson, Howard Carpenter Marmon, and Benjamin Bakewell; to be First Lieutenant, Dudley Baird, Henry Berkeley Budd, Thomas Freeman Eastman, Fred Tyson Mumma, and Spiro Sargentieh; to be Second Lieutenant, Lionel Samuel Schmitt and Howard Joseph Friedlander.

The exercises closed with the benediction by the Rev. T. C. Williams.

ALUMNI LUNCHEON.

After the luncheon in the Harmon Gymnasium, W. R. Davis, Esq., President of the Alumni Association, thus addressed those present:

"The Alumni extends to all members of the University, whether of the Faculty or of any department, and to these its friends, a hearty welcome. Some think of the University of California as a young University, but twenty-nine years old. But for my part, I always think of her as a staid and nourishing mother no less than two hundred and twenty-nine years old, for there was nothing good in education which did not come and lay itself down in this University twenty-nine years ago. As one of the rather early graduates, I must say, (I am compelled to say it,) that those of my day should really feel a profound gratification in the exercises of to-day and in this gathering in this room. There is no building that can hold us, so we formed that vast canvas place, and there were three thousand of our friends and members to listen to the exercises. There is no building large enough to hold us when we wish to eat luncheon together. This is not half the number who wished to be here: the number grew from three hundred to four hundred; then it swelled to five hundred, and this is all this room will accommodate. There were applications at this door for nine hundred and sixty. I mention this to make the fact concrete before I sit down. It furnishes gratification for every man who is working for the University to feel how strong she is growing. We feel within the reach of our arms the strength of these vast forces. This meeting gives us all the consciousness of unification. There is no better illustration than that of the old Roman fasces. The fasces was the emblem of strength in union, and we come here, the Alumni of all departments, and meet again as loving children running to their mother's knee."

Mr. Davis then introduced as the toastmaster for the afternoon President Kellogg, who, in accepting the position, spoke as follows:

"Ladies and Gentlemen: I hardly know why this office should be taken from the President of the Alumni Association and assigned to me. My first explanation is the most natural. My solution is that the older men have

desired to place this duty upon the younger ones. I am one of the younger men to-day; and yet I go back to the early days of the University, back to the days of the College.

"Some of you, at least, remember the early Alumni gatherings, in the days of the College of California, and the interest that centered in those gatherings. Afterward that General Alumni Association gave way to the Alumni Association of the University. After the commencement exercises there was in those days some gathering of this kind for a luncheon. The old room was in those days, however, too large for the gathering. Upon one occasion we called upon a stranger to address us. We had to omit the remaining addresses, for his address lasted an hour. This killed the post-Commencement luncheons. As we do not want these Alumni gatherings to go in a similar way, we have made a rule that no speech shall last over five minutes. But we do not apply this five-minute rule until after we have passed Dr. LeConte.

"This is a glad day for the University of California; and I see in the future days still more glad, if the Regency, the governing body of this institution, maintains its old position that the University shall be free from political influence; if the Faculty shall continue to call in good men for its members; if the students shall show the good sense they have shown in the past year; if the Alumni shall pledge themselves to do all they can for the welfare of their Alma Mater.

"Now, I have the great pleasure of introducing to you a gentleman who is to speak upon the "College Man in the Affairs of the World." He knows what he is talking about. He himself is an example of the university man. Mayor Phelan shows that it pays to be a college man by the fact that he is the Mayor of San Francisco,—and the elevator has not stopped running."

Mayor Phelan responded as follows:

"I understand that when the University was founded, it was designed to induce its graduates to take up life upon

the farm, Bingo or some other. It was understood that this was an agricultural state and that the University should endeavor to train the young men in the agricultural affairs of life. This is one of the purposes of the University, and one which has been well served, too; but the University has grown broader and larger than its founders ever dreamed. It has kept pace with the development of the world.

"There is a conflict in the opinion of the world between the college man and the self-made man. The difference is this, perhaps. The self-made man, in a limited degree, acquires great knowledge of the affairs of the world at the close of his career. The college man has all this at the beginning of his career. The college man has it brought to him under favorable auspices. The school of experience is a very hard school, and this is the school attended by the self-made man. How many failures the self-made man makes before he arrives at the goal! And when he does arrive he is exhausted. The college man comes into the affairs of life fully equipped.

"Every man is the architect of his own fortune, and but few learn the trade. The college man has learned his trade when he comes into the affairs of the world. In his stern old age, the leisure which comes with age should find him well-housed. The college man who comes into the world with his knowledge of architecture, builds his house with beauty. But the self-made man knows nothing of the trees, the flowers, or those things which elevate the mind. I am disposed to think that the University equips man well for the affairs of the world. It develops him himself, it develops his mind. The body is not alone cared for in the University, and the exercises to-day demonstrate the fact that the University has done well. A Japanese, who attended one of our universities, upon his return to his native land, was asked by a countryman, "What do the men do in the university?" He replied, "Oh, they play football, they play baseball, and they have all sorts of

athletic sports. In fact, we are out of doors all the time." "What do they do when it rains?" asked the countryman. "Oh, when it rains, we read books." Now, notwithstanding the dry season, when there was no rain at all, this University has done well, and the men have not only developed into athletes, but they have also read the tomes. They have built their houses substantially and beautifully.

"At a public election, there were all sorts of candidates representing all sorts of reforms. The constituency was in doubt as to whom they should vote for. A university man was among the candidates, and when asked upon what he stood, he did not reply, but hesitated. The constituency said, 'All the gentlemen are standing upon platforms. Surely you are standing upon something.' The university man replied, 'I stand upon my head.' The man who stands upon his head is the college man. He is bound to succeed, if he stands squarely upon his head. He embraces the best thought of his country, and he is well acquainted with the best and tried models of national government. He is the man that we must look to."

In responding to the toast, "My Big Family," Professor Joseph LeConte said:

"I accept the title of father and its responsibility with pleasure. How numerous a family, and still they come in greater and greater numbers! Some of the children are not here, because they have not yet gone out of the University. The larger number are still nurslings, mere babes, sucklings, mewling in the nurse's arms, unaware of what is in store for them in the future. Some are weaned only to-day; they have cut their eye teeth and their stomach teeth, and have only to-day left their nurse's arms; and now with shining faces they are creeping off to school, the great, hard, cruel school of the great world,—unwilling perhaps to leave their nurse. Some I see already, now that the war is on, are about to seek the bubble reputation, even in the cannon's mouth. Some have climbed to the topmost round of the ladder. And now you have all gathered back

to the old home, my children, to renew the old associations, to weave more strongly the bonds of affection, and especially to see the good old mother, for the mother is the bond of unity of every big family. In the old days when most of you were still in the nursery, I did what I could to keep you quiet, to make you behave and be good; and take it all in all I never have seen a better set of children than we have here. Some of you have been wayward; a little spanking has sometimes been necessary, but then I have left all that to the mother. She knows best how to temper justice with mercy. She knows best how to temper the wind to the shorn lambs, or better, to the plucked geese. And now we, your mother and I, have done our part as best we could. You have gone away from us now. The time may come when it will be your turn to do for us, and I will say this, that the greatest of the university forces is the influence of the graduates.

"I remember, when I was myself a little boy, the admiration with which I looked up to my big brother. There is no influence in a large family like that of a big brother or an older sister. The father is too high. We love and reverence him, but he is out of close sympathetic touch with us. But the big brother, he understands us better. He is our ideal. Now, the graduates are the babies. I would call upon the older graduates, the big brothers in this university family, to use their influence in behalf of the mother. How can this influence best be exercised?

"First, as to the recent graduates. I would have more of them remain with us, not in the nursery, not as mere learners, but as co-workers in the field of thought. The graduates of the University are the real university. I would see the graduate class increase.

"Then, as to the early graduates. They form the connection between the University and the public. I would like to see their influence more strongly exercised. They hold high positions in the country. Their coöperative

influence would be simply overwhelming. They can make the University what they please. All that is necessary is that you shall cultivate your affection for the mother, that individually you should come back to the University, that you should come together as to-day, in order to increase the loving unity of the big family; for the mother is the bond of the family."

Professor Edmund James, of the University of Chicago, being next called upon, spoke as follows:

"Your toastmaster said he expected to call upon me for a few words, and when I said it was not fair, he informed me that he would call me down after the first five minutes were up. I was strolling out yesterday afternoon along the hills overlooking the bay. A man came hastily across the lot and said to me, 'You must be a stranger here, sir.' I said I was a stranger, but I should like to know how he knew it. His answer was, 'Oh, we don't look at the scenery out here.' He asked me where I might be from, and when I told him I was from Chicago, he said, 'That's a good place to get out of.'

"I bring you a hearty greeting from those of us who live on the other side of the hills. The Klondike seemed to have aroused interest at one time in every town in the land, but the Klondike has given place to the war. Shortly before I started west, I passed along the eastern seaboard. All eyes there are turned upon the Pacific Coast. University men are entitled to take a serious view of the situation to-day. It is one of their functions to forecast the outcome of events.

"We have held before ourselves the idea that we could grow up independent of other nations. I am inclined to think that as an outcome of the present war we are going to learn a new lesson. We have been forced into a new position. If we retain the Philippines, this section of our country will be the nearest to that outlying possession; and hence, upon you and upon the people of this western seaboard, the eyes of the east are turned.

"Everyone who has followed the course of the development of this institution is surprised at its rapid growth. With this growth come new responsibilities, and you are working along the right lines to meet these responsibilities. We are all trying to interest the country in our higher education, and I believe that if you were to go to any part of the United States, you would be surprised at the growing interest in the higher education.

"Again, let me bring you a hearty greeting."

Professor Ritter, '88, the President of the Associated Alumni, responded thus to the toast, "Ich Dien:"

"Mr. President and Friends of the University: As I have had a little more time to study this expression than you have, I will translate it. It is German, as you observe. It means 'I serve.' In our vernacular, it means 'I do something.' I am put down here, as I understand, because I happen to be at the head of the Council of the Alumni. I may assume that I am expected to tell what this Council is to do. But we want you to find that out without our telling you. It would be quite impossible for me to tell all that we propose to do, even if I were inclined. But there are some things that I want to tell you.

"First, that our affiliated brothers are worth while to this University. I might say something about the law. The astonishing remark has come to me that the profession of law is not all that it should be. People say we are governed by lawyers. It does appear to be so. And it looks as though it would be easier to let the lawyers go on governing us than to attempt to get along without them. It will be better to make the lawyers what they ought to be than to deprive them of their position. We believe, therefore, that it is worth while for the University to do something for the law, and hence a number of lawyers received their degrees here to-day. Then as to medicine. We are accustomed to speak of the medical brethren as 'practicers of the healing art.' But doctors should really be builders, and after a time we shall not speak of them as merely practicers of the healing art.

"The other thing that I have to say is to bear testimony to the efficiency with which our representatives in the Council have done their work. If we can get as good work out of the professional people, as we call them, the chief benefit will not be to the professions, but to the University. This I wish to emphasize.

"We ask the friends of the University not to judge of our efficiency until we have completed some of our proposals. Give us your confidence, friends of the University, until we have proved ourselves unworthy of it."

Mrs. Sadie H. Gregory, '93, responded to the toast, "Unity of University Forces:"

"Mr. President, Ladies and Gentlemen: Once upon a time when, as a trembling Freshman, I used to sit on the benches of North Hall, I used to wonder what I should say if the Professor should call upon me. During the few days past, since I received a note asking me to speak on 'The Unity of University Forces,' I have been wondering what I should say. I asked Mr. Greene of the Council of the Associated Alumni what I should say, and he said he supposed I should speak on the Associated Alumni. Then I asked Professor Ritter what I should say, and he replied that I should speak upon the uniting of graduate men and graduate women. I suppose that I have the privilege of speaking, because I am a humble representative of the graduate women of the University of California. We have a large proportion of women, and therefore we have the more obstacles to overcome. The University will be only as strong as her women are.

"The particular thing that we women are to do is each one to make herself the most liberal exponent of university culture. I should like to see the university women develop more on the emotional, moral side; and the women who come here ought to be the very best stuff that California has, physically as well as mentally. I believe that we can make the Berkeley women rank first among the American women.

"Then, too, we women have it in our power to vindicate co-education. It lies with us to do away with some of the objections to co-education. We ought to have a keener enthusiasm for the name of the University of California. Every woman graduate ought to feel that there is some thrilling connection between her and the University, every department of the University.

"In the secondary system of education we who are to be teachers should see that the system is one link in the great chain. We should use our influence to see that the best men are put in the best places.

"It may sound like a selfish thing to say, but the University of California, as I have said, will be only as strong as her women are. We have been unifying, and now we are waking up to the fact that it is impossible for one department of the University to flourish while another department decays."

Dr. H. B. A. Kugeler, '90, spoke as follows in response to the toast "The Playful (?) American:"

"I don't think this is a square deal. Why didn't the toastmaster call upon one of the blushing graduates? Perhaps Mr. Davis has singled out a medical man to speak because the medical man always has to play second fiddle to the lawyer in settling the estate.

"We Americans are a frisky nation, from the Freshman gamboling on the green to the great Admiral Dewey with his performance at Manila. The Europeans don't understand us. The Spanish fail to see the point of the Manila incident yet.

"According to the Europeans, we are simply playing with education; we are simply moved by the rush for the almighty dollar. A German professor upon his return to Munich from America, was asked about our University. 'Oh,' said he, 'there are a thousand students and twelve hundred instructors.'

"It is said that we are leaving politics to the foreigners. They have left their sons with money and time hanging on

their hands, and one of them present has shown what good use they can make of their money and time. It is to be hoped that more of their sons will come forward and work along this same line. We cannot have too many men of the stripe of Mayor Phelan.

"There is another thing that we have been playing with. That is the militia. It has been the standing joke of every newspaper that the militia would run at sight of the enemy. They did run, but not in the direction people thought they would run. The militia of the University of California was among the first to respond to the President's call, and we find a number of students sharing the lot of men who are accustomed to such a life. If any of the Spaniards come here, we will show them that we can fight even though we have no standing army."

Mr. Sidney M. Van Wyck, Jr., '90, was then called upon to answer the toast, "Our Castles in Spain," and spoke as follows:

"If we mean by 'Castles in Spain' the property we are to have in Spain, we shall have many castles in Spain. I believe it will not be long before the Stars and Stripes will wave over the walls of Morro Castle. Judge Slack, in a speech at a banquet, said that the most successful response to a toast consists in saying as little as possible pertaining to the subject. So I will leave our 'Castles in Spain.'

"We have many hopes regarding the University. We have lately increased its income,—a step in the right direction. We hope that the Alumni of the University will hold a high place in the State, and that the plan which was spoken of at the Commencement Exercises by which professors might give a large part of their time to original research will be made possible.

"The distinguished lady who is a member of the Board of Regents has started the ball rolling, and in a few months the preliminary competition for the plans of the University buildings will be closed,—the plans involving the erection of fifteen buildings.

"We sum up our hopes for the future of the University in the increased buildings. Looking into the future, I see an immense area of beautiful structures. I look forward to an increased number of professors, men who will be a credit to the State. I see the Alumni building up the University and making it worthy of California."

Mr. Geo. W. Pierce, '75, next responded to the toast "All Branches of One Tree."

Mr. Geo. Clark, of the graduating class, who was to respond to the toast, "How It Looks to Me," being absent, Mr. Philip Thayer, '98, was called upon, and spoke as follows:

"I feel somewhat as the miner felt in the following incident: Two men were working at a mine, one at the top of the shaft and the other at the bottom. The machinery got out of order, and the carriage dropped. The man at the top knew that his friend at the bottom of the shaft was in great danger, so he shouted down to him, 'Say, Mike, are you killed?' The answer came back, 'No, Pat, but I'm knocked spacheless.'"

"As for the class of '98, modesty forbids me to speak of its achievements. A day or two ago we were called upon to add to our achievements, but it rained. Yesterday, however, we tried to give to our friends a little representation of the fun we have had throughout the four years of our college life. Our college life has been both profitable and pleasant, and now after being Seniors we must take the hands of those who call us Freshmen. We are glad to be alumni, and will strive to be alumni who will work for the success of our dear Alma Mater."

The singing of "Auld Lang Syne" closed the exercises.

ALUMNI BANQUET.

The Alumni Banquet was held at the California Hotel, San Francisco, on the evening of Commencement Day, and was, with a single exception, the most fully attended of any given by the Association, between three and four hundred being present.

The President of the Alumni Association, Wm. R. Davis, Esq., '74, acted as toast-master, and after welcoming the graduates, spoke on "The Average." In the course of his remarks he said:

"Every man owes something. We belong to the class that owes more than the average. We have received opportunities above those of the average man in this community. And every man owes to his self-respect, to his family, to the State, just as much as is an honest measurement of his obligation set up against the circumstances he has enjoyed. I want to press this thought clearly and firmly home on the judgment, on the conscience, on the life of every man and woman sitting here. The life that runs to-night, runs to-morrow, and runs forever.

"I know that there are some who look upon college as a place for the better equipment of hands, for the better filling of their quiver of individual opportunity with arrows for the better securing of a job and for the securing of the better job. There are others who look upon university life as an opportunity to acquire the mastery of some specialty, without cross-reference between departments. He who seeks the University to fit himself for the better job or the mastery of some specialty has not caught the thought, the theme I may say, which springs from our youth.

"The law of gravity as applied to material and tangible objects is indispensable; it is fundamental. Everything is built in obedience to this law. In accordance with the law of gravitation, the foundations of our University are laid down in granite. Her roofs extend in generous protection and shelter. All things are established in obedience to this law. And we in our hopes and expectations learn to remember that all must be founded in obedience to the law of gravitation.

"But there is another gravity just as true as this, as universal as this, more beautiful than this. There is something in you, something in me, that uplifts against the law of gravitation. We reach the truth by a force other than

the process of reason. The sense of beauty flows out, but cannot be demonstrated by reason. I want to invite you of the scientific departments and all of the departments of exact research to investigate this thought. Forget not that you owe an obligation to undertake that work which asks your intellectual best."

Hon. Horace Davis was then introduced and spoke as follows on "The Graduate Afterwards:"

"I am to take up the graduate in the world. I heard Mr. Carnegie say that a college education was an injury to a man. Is this true? I never had a man work for me that knew too much. Every man is glad he knows so much, and he never knows so much that he wishes he knew less.

"I had occasion just the other day to see the value of having a trained mind. I went to a mechanic to find out how a young man, a college man, who was in his employ, was getting along. The foreman told me that he could learn more in a week than the other workmen in six months. 'I don't know how it is,' said he, 'but he learns right off. The ordinary workman does not learn quickly. I suppose it is because he has a college education that he learns so quickly.'" It was the result of the training that his mind had had, of the analytical power that his training had given to the man.

"A man gets lots of fun in college, but he also gets a knowledge of the best thought the world has produced, the thought of the best men from the days of Homer to the days of Browning. I know men, good men, who never read a book, never read anything except the Sunday newspaper. A college man carries a better taste with him through life. There are very few dissipated men among college graduates. Their standards are high. A man who knows Homer, Sophocles, and the other masters, and lives with them, cannot live in a corner grocery. You cannot have good taste and good judgment unless you carry with it high ideals, and this is what the university man should take

out into the world. He should take out the resolve to be an honor to his Alma Mater. He should do all that he can for his nation and for his race. I want you to feel your responsibility, the duty that you owe your country, not for to-day only, but for your whole life, that whatever you have that is good shall be devoted to your God and your country."

President Davis, in introducing Miss Peixotto, said: "You will observe that you have with you a goodly number of the women graduates of the University. We heard this afternoon from one of their representatives. I want to make this point in justice to them all, that they are right-minded women, instead of strong-minded. I call on Miss Peixotto to speak on 'College Spirit.'"

Miss Jessica Peixotto, '94, responded:

"I am very grateful for the compliment which the President has paid to the ladies of the University. But he said I was to speak on the 'College Spirit;' I beg to say not, I am to speak on the 'University Spirit.' While an undergraduate, there is something in college spirit. But the term gets to be a bore after a time. I am glad to feel there is something besides college spirit. University spirit is something higher. I believe in higher education as a means to the advancement of modern thought. It is right to make a personal sacrifice for the end in which one believes. It is this sort of spirit which is to belong to the alumni. It is for this university spirit that I rise this evening. We of the alumni should strive for this university spirit."

In responding to the toast "University Soldierly" Mr. Frank H. Powers, '84, said:

"From the standpoint of the University Soldierly our tide has been brought to its flood by the National Guard's being called upon to supply volunteers for the Manila campaign, rendering it necessary for the commander-in-chief to devise a new force for two purposes: first, the proper

defence of his commonwealth during the absence of the militia as volunteers; second, the proper preparation to fill subsequent calls for volunteers by the President of the United States. Here is the opportunity for our officers who stand with commissions in a battalion having no privates to step forward and show their capacity for filling up the recently depleted ranks of the militia, and thus lead the University's military on to fortune. If we fail to grasp this opportunity, it will be definitely settled that our commissions are as useless pieces of paper in times of war as in times of peace and our end will be the military shallows and miseries. The State has temporarily lost about thirty-five companies by having them transformed into United States Volunteers. What is the State going to do for militia men in the meantime? Let the Governor detail enough officers of the University of California from the retired list as shall be necessary to raise "minute men" to take the places of the absent guardsmen and to drill them and to maintain organizations made vacant by the enlistments. Should the militia return, our detail will be at an end and we will merely have trained some men for duty. If they do not return, we will have a new force and prepared new material to be sent forward as volunteers. The officers need not be sent unless necessary, but the men are there and the University will have paid a portion of her debt to the national government for the one hundred and fifty thousand acres of land she gave us in 1864. Here is California's opportunity. We can act as the incubator of reserves. It is our duty—it is our right. If the system is properly inaugurated, not only will we have given the State a practical means of recruiting her forces in the field, but we will have added a dignity to the commissions of the University's officers, which will in turn demonstrate to the general public that in another channel the University's work is for the betterment of the commonwealth."

Mr. John E. Budd, '74, in responding to the toast, "Us Patriarchs," said in part:

"I came to the Commencement feeling rather young, and in the afternoon I strolled out under the oaks down at the lower end of the grounds where our class had the honor to initiate the first class day. It seemed to me a very singular coincidence to see the class of '98 come down with the same old yell and enjoy themselves in the same old way. It made me feel aged when I saw my own son among the members of the class,—the first grandson of the University.

"This morning I listened to a polished address by Professor James. Yesterday I listened to the speeches of the class of '98. This afternoon there were more speeches. I began to feel aged. Therefore, I came here to respond to the toast, 'Us Patriarchs.' Although old Father Time had razed some of the hair from our heads, our hearts are still young. We stand with you to-night just as ready to work and labor for this great University as you young fellows who graduated to-day."

Mr. T. A. Perkins, '96, was called on to respond to the toast, "Higher than Wages," and said:

"This topic is too much for an ordinary man like myself. We all appreciate the value of a common education, but we value still more highly the education of the university graduate. The supremacy of a nation is based on its education. There is a tendency to look to the almighty dollar rather than to education. The dollars may leave us, but the education is something that we can fall back upon in later years. We have never met a college man who has regretted the four years spent in college."

President Davis then displayed a silver cup and said: "This cup is an object of interest to you all. Twenty-four years ago, the idea was conceived and to-day it is realized. When the class of '74 was graduated we left what money we had with the class treasurer, to be devoted to the purchase of this cup, to be presented to the child of any member of the class of '74, that should first graduate from the University. It fell that a child was born to John E.

Budd, and that child was a boy. That boy is now the owner of this cup. Now, you see in the Budd family we have all the concentrated virtues of the class of '74. We have with us both the young man and the old man."

The cup was then presented to Mr. Henry Berkeley Budd, '98, who, in accepting it, said: "The most involuntary distinction I have ever had was when I was born. I was not born with a silver spoon in my mouth, but I was born with a silver cup right next to it. As the cup is right next to it now, I propose a toast to the class of '98."

President Davis, introducing Mr. Gardner Williams, said: "You have no idea how far one man has come to be present at this banquet. I interpolate his name here, and call upon Mr. Gardner Williams, '65, to respond to 'Us Africans.'"

In his response Mr. Williams said:

"In listening to the address of Professor James, this morning, I thought I saw one important element of college education left out. We ought always to labor concerning the diplomatic service, that we may see men go abroad whom we may respect and who will be an honor to our country. I have lived in a community in which not one representative of the United States has been a man in whom I have placed the least confidence. One great thing for us to do is to make our diplomatic service a respectable one. I hope that some day this will be taken out of the political arena, and that we may see such men go forth to represent us as are worthy of our confidence and esteem.

"I have resided for fourteen years in a British colony. On all occasions I have seen the Stars and Stripes hung up beside the British flag. I looked upon these walls and thought to see the British flag hung beside the American. The feeling in England is that being English-speaking nations we should unite more than we have in the past. This can be done by sending out university men like yourselves to represent us in the world."

Mr. D. E. Collins, '74, spoke on "The Earnest Student, as follows:

"In considering character, we must recognize congenital qualities. The social inequalities become less marked as we get older, but the inherent differences become more marked. We must attend to the details of life. The little things of life make all there is of it. The experience of to-day and to-morrow repeated makes habit, and habit makes character. We may have overlooked the fact that there is something more than intellectual caliber. But there is spirit, character.

"We are living in stirring times. We are living in a great nation. It is the mission of a nation that makes the nation great. England is great because of colonization. It is our mission alone that makes us a great nation.

"Think of Assyria, the pride of the Orient. Think of Greece, whose influence has been greater than that of Rome. Think of Switzerland, which has become the home of religious liberty. Think of Scotland during the times of reformation. Thank God that the mission of a nation always survives.

"I say, when I think that the strongest elements of American character are being fused in the American mind, that this nation will lead the world in the progress of civilization. Let us, the graduates of the University, being part and parcel of that which makes the nation great, build up character. We should emphasize that part of the man which is the only lasting part of him, his character."

Mr. J. W. Leggett, '98, gave a humorous response to the toast, "Us Seniors, Turned Freshmen;" and Mr. Geo. Clark, '98, was called on for the toast that he was to have given at the Alumni luncheon. Mr. Clark spoke as follows: "I had hoped that I was out of it, but I see that I am not. The toast that I am to respond to is 'How It Looks to Me.' It has been said that we who have just become alumni hold a very high opinion of ourselves, but I don't think so. To the recent college graduate, the future presents no definite

vision. Whether he will be a success is a matter of doubt to him. He feels that character building has come to an end. He graduates with a small pocket-book, but, according to some of your members, with a 'big head.' I think that the older Alumni make a mistake in this statement.

"We realize that we have left the world of books and are entering the world of practical life. It seems to me, a recent graduate, that we do look upon this world in the practical, common-sense way, in the logical way, and we hope to know something, to do something, that our Alma Mater may be proud of us."

Mr. Finlay Cook, '88, being called upon, gave reminiscences of his college days, and with these the exercises closed.

By the will of Mrs. Anna Van Reynegom Pixley, who died at Corte Madera, May 26, 1898, \$3,500 is left for the establishment of the Frank M. Pixley Scholarship in the University of California, and the executors are authorized to add more if necessary to make the bequest effective.

Since March the University Library has received on current orders some eleven hundred volumes: three hundred and ninety-one from England, two hundred and eighty-seven from Germany, one hundred and fifty-eight from France, and two hundred and sixty-five from American publishers.

In the first number of the Chronicle an extract from the report of the Student's Aid Society for 1897 was given. The Society has since accepted the offer of the University branch of the Young Men's Christian Association to carry on the work as one of its activities, and hence goes out of existence. A brief summary of its history is therefore appropriate.

It was organized on September 23, 1891, by J. W. Blankenship, who became its first secretary. He was followed in that office by M. S. Baker, Lucy Williams, Wm.

Belfrage, J. B. Davy, and J. D. Layman. At first the secretary was also the managing officer, but the work grew so that in August, 1894, it was decided to divide the offices, and to pay the manager a salary of from \$10.00 to \$15.00 a month. The managers were J. T. Handsaker, W. C. Russell, J. G. Howell, Jr., and W. W. Bristol.

The work of the Society has continually grown, much of its success being due to the efforts of its two presidents, Prof. C. B. Bradley and Prof. W. B. Rising. In the seven years of its existence it has found employment for two hundred and fifty students, who have been enabled to earn \$10,199.00.

The engineering students of the University, on Thursday afternoons of this term, have listened to lectures given by gentlemen not connected with the University as follows:

February 10.—The Characteristics of a Good Surveying Instrument, and how to select one; by Mr. A. Leitz.

February 17.—Foundations of High Buildings in Difficult Soils, by Mr. G. W. Percy.

February 24.—Skeleton Structures in Modern High Buildings, by Mr. G. W. Percy.

March 3.—What the young engineer must expect to meet, and how to meet it; by Mr. G. W. Dickie.

Other lectures by experts in various branches of engineering have been promised for next term.

The following is an abstract of a paper read by Professor E. B. McGilvary, before the Philosophical Union, March 25, 1898; in criticism of Professor James' essay, "On Some Hegelisms."

The thought that underlies James' attack upon Hegel is the central thought of all empiricism, and may be thus expressed: "Reality and the ego are two fundamentally different things, and the ego's knowledge of reality is from the point of view of the ego an accident." This thought must be critically examined before James' criticisms based upon it can be intelligently discussed. An examination of this thought shows that it involves:

1. The assertion of an abstract ego, which proves under investigation to be the most shadowy of shades, and to have no existence even according to the testimony of James the psychologist.

2. The assertion of a reality, which is not a reality for consciousness. This also, when examined, turns out to be an unthinkable, self-contradictory conception. For to assert or to prove the existence of anything is to establish its existence upon an intellectual basis; it is to say: "If judgment is valid, then the thing exists." But to go on to say that therefore the thing exists apart from judgment and intelligence is to commit the Converse Fallacy of Accident, which at bottom is James' pet abomination, the *argumentum a dicto secundum quid ad dictum simpliciter*. In fact, reality presupposes the articulation of the real within a system, as much as the system presupposes real elements that are articulated. It is neither true that there are first unreal elements, which subsequently have reality bestowed upon them by a superinduced concatenation; nor is it true that there is first an ideal concatenation, which is then made real by the incorporation within itself of real elements. The concatenation and the elements are each an abstraction apart from the other, and each unthinkable without the other. Now every particular thing that has reality must be an organic element within this system, presupposing the other elements and presupposed by them. But our ideas or our consciousness are real, at least as ideas. This reality of ideas must therefore presuppose all other reality, and be presupposed by all other reality. Hence a world apart from idea, from consciousness, would be a reality apart from its articulation with real consciousness in the only real system possible; that is, such a world would be a contradiction in terms.

But within the system of reality what is the nature of the relation between consciousness and other reality? The ultimate relation between them is expressed by saying that other reality is object to idea, that idea is conscious of other

reality. Every other relation that can be made out presupposes this relation of consciousness to object, of objects to consciousness.

But it must be remembered that when against empiricism we maintain that every possible "thing" presupposes consciousness, we do not maintain that there must be a timed consciousness of that thing, simultaneous with the timed existence of that thing. The doctrine of the dependence of everything upon consciousness may very well be held by one who also holds that at an early date in the history of the universe there were no empirical mental states; that there was no sensation, no perception, no emotion, no volition, taking place in time before the development of physiological organisms. And this question of temporal precedence is a matter of history and not of philosophy, and must be determined by scientific methods.

This position appears to be consistent as soon as it is seen that according to the preceding principle, in order to be real, time must be an object of consciousness. But if object to consciousness, then consciousness must transcend it and hold it within its unity, and not be itself integrated into unity by the continuity of time. But this means that consciousness as consciousness is not in time, but time is in it. And the so-called states of consciousness which psychology investigates, in so far as they are timed, are not consciousness at all, but are objects of consciousness.

We have thus reached the point of view of Absolute Idealism, where every other reality than the reality of consciousness itself is seen to be a reality that has meaning only when asserted to have its existence as object to consciousness; while the reality of consciousness is the reality it has as being a consciousness of objective reality. Consciousness and all other possible reality form, thus, an integral system, an absolute unity of absolute distinctions.

From this position all James' contentions against Hegel are seen to be futile. Only one point can be developed here. James charges that Hegel does violence to the

fundamental law of all thought, the Law of Contradiction, in maintaining that contradictories are at bottom one and identical. But if contradictories can be thought at all, they must exist in the unity of the consciousness that thinks them, and they must share the identity that everything shares which has place within this system. But while thus identical, they are also distinct and fundamentally so; and the nature of this distinction is in this case this: namely, that the relation in which they stand to each other is determined by the category of contradiction. Contradictories, then, are really contradictory for thought; but, just because they are, and in order that they may be, thus contradictory for thought, they must partake of the unity of the consciousness for which they are contradictory. Hegel never maintains that the contradictory relation is on a par with the relation of identity. The identity transcends the contradiction. In this sense the identity and the contradiction are not *secundum idem*, when by *idem* you mean an identical point of view that excludes all differences. But as there is no identity so blank and bare as to exclude differences, the denial of such a *secundum idem* is harmless, and does not in the least impair the necessity of regarding the identity and the contradiction as being *secundum idem* in the only sense in which *idem* has any meaning—in the sense in which it includes *alia*.

The following announcement has been made concerning summer courses in Physics and Chemistry:—The physical and chemical laboratories at Berkeley will be open from June 23rd to August 5th, this year, and practical laboratory courses, supplemented by lectures upon the principles involved, will be offered to teachers and to other interested persons who may be qualified. The exercises will be primarily adapted to the needs of teachers in the secondary schools of the State. They are planned so as to give information and training that are needed, in order to teach the subjects with success where laboratory methods are used.

Progress in developing the methods and fixing clearly the aims of such school-work has been so rapid, that the best available results have not yet found their way into books. This fact enhances the importance to teachers of the opportunity thus offered. By using it, they may place the instruction in their schools on a solid foundation. Courses of laboratory instruction in Physics and Chemistry will be provided, also, for students and applicants who wish to do experimental work in preparation for University matriculation. An opportunity to do more advanced work will be offered to a limited number of qualified students. Details will be so arranged that both the summer course in Physics and that in Chemistry may be carried on at the same time; but it is evident that more thorough work can be done where the effort is confined to one of the two subjects.

The courses in Physics will be given by Dr. W. P. Boynton. The laboratory dues have been fixed at five dollars, which must be paid in advance. Inquiries for further information may be addressed to Frederick Slate, Professor of Physics, Berkeley, California.

The courses in Chemistry will be given by Mr. J. H. Gray, Jr., and Mr. W. C. Blasdale. A deposit of ten dollars will be required, which must be paid in advance. Of this amount, seven and one-half dollars will be retained: the cost of the apparatus broken will be taken from the remainder, and the surplus will be refunded to the student. For further information, address Mr. J. H. Gray, Jr., Instructor in Chemistry, Berkeley, California.

No other summer courses will be offered at Berkeley, in 1898.

